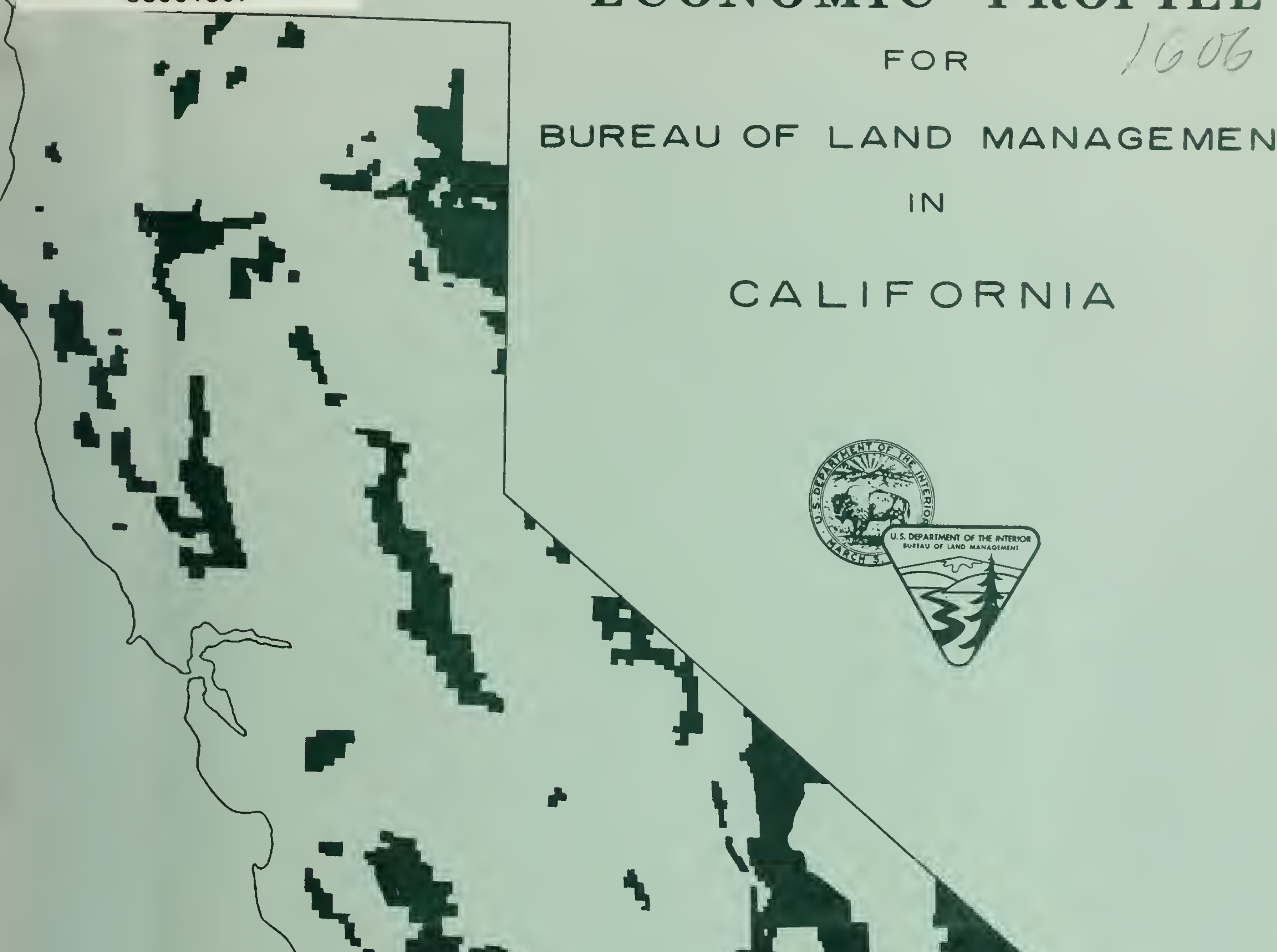
BLM LIBRARY
88001307

ECONOMIC PROFILE
FOR
BUREAU OF LAND MANAGEMENT
IN
CALIFORNIA

1606



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Bureau of Land Management
Library
Bldg. 50, Denver Federal Center
Denver, CO 80225

Bureau of Land Management
Library
Denver Service Center

#6567014

ID: 88001307

HC
107
.C2
L362

ACKNOWLEDGEMENTS

Grateful appreciation is given to Dr. Gerhard N. Rostvold, Consulting Economist, and former Professor of Economics at Pomona College who compiled the original draft of the Economic Profile for the Bureau of Land Management in California.

Significant contributions were also made by the technicians and staff of the California State Office of BLM.

BUREAU OF LAND MANAGEMENT LIBRARY
Denver, Colorado
88001307

Bureau of Land Management
Library
Denver Service Center

FOREWORD

The State Economic Profile for the Bureau of Land Management in California was developed and written in accordance with regulations outlined in Part 1603, Program Guidance of the Bureau Manual.

As a component of BLM's Program Guidance system, it provides the State Director with data and projections of effective output demands for key resource products produced from the public lands within the State. More specifically, the economic profile projects demand for the principal resource products and attempts to assess BLM's capability in supplying resource product demand. In projecting the level of the State's economy to 1980, and relating opportunities for BLM resource requirements to that year, the profile does not show exactly how much of each product should be produced, but rather emphasizes the direction and magnitude of future resource product demand.

Seven broad assumptions about the nature of California's economy through 1980 have been made in developing this economic study. They are listed below and are the same used by BLM technicians and administrators in developing long-range plans for the public lands.

1. There will not be a major war, with related economic impact similar to that experienced during World War II.

2. There will be a continuation of the "Cold War" with periodic eruptions such as Vietnam, which will require maintenance of the present pattern of defense expenditures.

3. There will be no profound change in the existing socio-political order.

4. There will be no severe and wide-spread depressions.

5. While there will be no dramatic scientific technological change having a major impact on the public lands, technology in general will continue to improve.

6. There will be a continuation of national population growth and a steady increase in individual prosperity.

7. There will be a continuing shift of population toward urban centers, with the development of "new towns" within reasonable commuting distance of urban centers.

Economic Profiles are updated as often as necessary to keep them current. Pages are dated to indicate the last date of preparation or most recent modification.

TABLE OF CONTENTS

Page

SUMMARY AND CONCLUSIONS i

I. INTRODUCTION AND BACKGROUND 1
- A. Purpose, Use and Scope of the Economic Profile 1
- B. Physical Characteristics of California 2
  - 1. Location Topography and Climate 2
  - 2. Soils and Vegetative Cover 4
- C. Ownership and Administration of California Lands 4
  - 1. Land and Water Area 4
  - 2. Land Use and Capability 4
- D. Economic History of California 10

II. THE CALIFORNIA ECONOMY: 1940-1980 11
- A. Economic Highlights 11
- B. California in Relation to the Economy of the Eleven Western States and the Nation 11
- C. The Economic Impact of Government Programs on the State's Economy 12
  - 1. Net Capital Investments 14
  - 2. Investments and Receipts - BLM Administered Lands 14
  - 3. Payments to California - BLM Administered Lands 14
  - 4. HHFA - 701 Grants 14
  - 5. California's Twenty Year Water Resource Development Program, 1966-1985 20
  - 6. Salt Water Conversion 20
- D. Lands - Past, Present, and Future Demand for Public Domain Transactions 23
- E. The Geographic Pattern of Urbanization and Economic Development 25
- F. The State's Economy in Depth 25
  - 1. Population 25
  - 2. Income Profile 37
  - 3. Employment Profile 40
  - 4. Gross State Product 48
  - 5. Basic Industries in California and Use of Public Domain Products 50
    - a. Forestry and Lumber 50
    - b. Agriculture 60
    - c. Mining and Petroleum and Gas 66
    - d. Recreation and Tourism 73

Page

III. RESOURCE END PRODUCTS FROM BLM ADMINISTERED LANDS - PRESENT PRODUCTION THROUGH 1980 74
- A. Wood Products 74
  - 1. Present Situation 74
  - 2. Forecast to 1980 77
- B. Livestock Grazing 77
  - 1. Present Situation 77
  - 2. Forecast to 1980 81
- C. Wildlife 84
  - 1. Present Situation 84
  - 2. Forecasts to 1980 86
- D. Minerals 91
  - 1. Present Situation 91
  - 2. Forecasts to 1980 92
- E. Water 92
  - 1. Present Situation - Statewide 92
  - 2. Water Yields from Public Domain Land 96
  - 3. Future Demands - 1980 96
- F. Recreation 99
  - 1. California's Outdoor Recreation Resources 99
  - 2. Outdoor Recreation Use and Demand 99
  - 3. Public Recreation Suppliers 99
  - 4. Public Recreation Expenditures 99
  - 5. Public Agencies and Fullfilling Public Recreation Needs 100
  - 6. BLM's Recreation Role 101
  - 7. Demands of New Recreation Activities 102
  - 8. Impact of Managed Recreation Use of BLM Lands 103
  - 9. Estimated Funds Necessary to Plan, Develop, and Maintain and Manage a BLM Recreation Program in California in Relation to Demand through 1980 103

REFERENCES 104

TABLES

No.	Title	Page
1	Land Status in California	7
2	Lands Administered by BLM in California Counties	8
3	California Land Areas by Major Class of Land	9
4	Population Growth of California, Western U.S. and Total U.S.	13
5	Net Capital Investment by Levels of Government and by Functional Categories - 1950-1961	15
6	Investments made in California BLM Administered Lands for Development and Conservation of the Range Resources - 1934-1951	16
6A	Investments in BLM Forest Development Program	17
7	Cash Receipts from BLM Administered Land and Resources in California - 1940-1966	18
8	Payments to the State of California from Public Land Revenues	19
9	Population Growth in Selected California Counties - 1940-1965	26
10	Components of Change in California Civilian Population - 1950-1965	31
11	Total population of California Counties, 1960 with Projections to 1980	33
12	Selected Seasonal Statistics - 1960 - by California Counties	34
13	Percentage Age Distribution	35
14	1960 Age Groups Compared - Los Angeles County California - United States	36
15	Age Distribution by Sex	37
16	Personal Income in California - Total and Per Capita	39
17	Sources of Personal Income, California - 1950-1965	41
18	Disposable Income - 1950-1965	41A
19	Civilian Employment in California 1940, 1960, 1965	43
20	Civilian Labor Force - 1960-1965	44
21	Manufacturers: Employment, Payroll, Value Added, and Capital Expenditures, by Industry, California 1963	45
22	Percent Distribution of Manufacturing Employment	46
23	Labor Force, Employment and Unemployment in California - May 1965-1966	49
24	Major Classes of Land by Ownership Class of Commercial Forest Land, California - 1960	52
25	California Timber Production - 1964	53
26	Net Volume of Growing Stock and Sawtimber on Commercial Forest Land in California, by Species, 1963	55
27	Production of Other Forest Products in California	56
28	Production of Miscellaneous Forest Products in California, 1964	57

August 1967

TABLES

No.	Title	Page
29	Lumber Production in California - 1930, 1940 1945, 1950-62	58
30	Estimated Employment and Value Added Attributed to Timber in California, 1958 Base	60
31	Number of Farms, Total Land Area, and Land in Farms, by County, 1964	62
32	Cash Farm Receipts, by Commodity Group, Five Year Averages 1930-49, Annual 1950-64	64
33	California's Agriculture Commodities: Their Importance, and Leading Producing Counties - 1966	65
34	California Mineral Output, by Commodity, Selected Years, 1940-65	68
35	Value of California Mineral Production, by Fuels, Metals, and Nonmetals, 1931-65	69
36	California Petroleum Output, by Counties, 1961-64	71
37	California Natural Gas Output, by Counties, 1959-64	72
38	Standing Volumes, Current Annual Cut and Optimum Potential of BLM Forest Lands	75
39	Total State Livestock Production and Production on BLM Lands	78
40	Range Condition and Trend - 1963	80
41	Beef Cattle Production and Feed Requirements	81
42	Sheep Production and Feed Requirements	82
43	Wildlife Inventory and Harvest	84
44	Big Game Numbers - California, 1964	85
45	Summary of Inland Fish Inventory	87
46	Wildlife Habitat Changes - Statewide	88
47	Mineral Activity- Gasoline and L.P.	93
48	Ratio of Potassium Ore Produced from BLM Lands to Tons of Potash Produced in California	94
49	Ratio of Sodium Ores Produced from BLM Lands to Tons of Sodium Produced in California	94
50	Crude Petroleum in 42-Gallon Barrels	94
51	Estimated Annual Requirements for Water by Hydrographic Area, California	98

August 1967

ILLUSTRATIONS

Maps

No.		Page
1	Generalized Land Status	8A

Figures

No.		Page
1	Geomorphic Provices of California	3
2	California Soil Regions	5
3	Vegetation in California	6
4	California Water Transfer Plan	21
5	Water Resource Development State-Federal Program for 1966-1985	22
6	Population California's Cities 1940-1960	27
7	Regional Population Growth 1870-1960	28
8	Population Distribution in California - 1960	29
9	Percent Change in Total Population of Counties - April 1, 1960 and July 1, 1964	32
10	Changes in Age Groups 1958 and 1980	38
11	Per Capita Income, California: 1950 - 1965	42
12	Manufacturing in California - Type and Percent Distribution of Employment	46
13	State Economic Areas	51
14	Major Lumber Areas in California	54
15	Major California Farm Products	63
16	Major Oil and Gas Fields	70
17	Commercial Timber Stands on the Public Lands in California	76
18	Mineral Production 1940-1965 (Total Production and $ value with Projections to 1980)	95
19	California Water Supply and Demand	95A
20	Future Water Requirements 1970-1980	97

SUMMARY AND CONCLUSIONS

ECONOMIC PROFILE FOR BLM IN CALIFORNIA

Summary and Conclusions

With more than 100 million acres within its borders, California ranks as the 3rd largest state in the nation. BLM administers approximately 15 million acres, or 15 percent of the state. Largest land holdings are in San Bernardino, Inyo, Riverside and Lassen Counties.

At present, only 2 percent of the state's land area is committed to urban use. Forty-two percent is covered by forest, whereas about 13 percent is under cultivation. Despite California's rapid urbanization, industrial growth, and ever increasing population, much of the land area will remain in a "state of nature" producing forage, timber, minerals, watershed protection, wildlife habitat, and recreation through 1980.

If history is a forecaster of events, continued population increases will see urban-economic growth dominating (1) the southern California metropolis comprised of Los Angeles, Orange, Ventura, Santa Barbara, San Diego, Riverside, and San Bernardino Counties, and (2) the northern California area consisting of San Francisco, San Mateo, Santa Clara, Alameda, Marin, Solano and Contra Costa Counties. Self-contained urban complexes are also expected to develop in and around Sacramento, Fresno, and Bakersfield. Impact on BLM from urban expansion will be increased demands for open space and recreational resource outputs from the public domain lands.

In 1965, fifty-six percent of the population lived in Los Angeles, Orange, San Diego, San Bernardino, Riverside and Ventura Counties. From 1940 to the present time, California's population has increased from approximately 7 million to 19 million persons. By 1980, population is expected to surpass 28 million persons. The state now ranks as the most populous in the nation.

California also is the nation's leading agricultural state; both in terms of total dollar value of farm output and in variety of items produced. Its manufacturing is only surpassed by the state of New York. Manufacturing employment increased from 461 thousand in 1940 to over 1,500,000 in 1966. In the twelve month period subsequent to May, 1965, 84,000 new manufacturing jobs were added to the state's employment base.

Even though urban-industrial expansion continues to consume land, agricultural acreage will remain predominantly greater and will maintain its importance in the state's economy through 1980.

Compared with the other western states, California dominates the western economic scene. Fifty-seven percent of the population of the eleven western states is accounted for by California. Over 50 percent of the employment in the west is also located in the state. Personal income exceeds all of the other western states and represented 11.3 percent of the nation in 1965, at $59.7 billion. Per capita income exceeded the national average by 18% in 1965 at a level of $3,209. Median family income was $8,000 in 1965.

Education of California's residents ranks favorably with the nation in years of school completed. Of those 25 years or older, the median school years completed in 1960 was 12.1 years compared with the median figure of 10.6 years for the nation. More than 51% of the state's population, age 25 and older, have at least a four year High School education. Nearly 10 percent of this segment of the population have had four years of college. Median age of the state's population was 28.4 years in 1965. Only 8.76 percent of the state's population was over 65 years of age in 1960.

California's labor force and employment reached an all time peak in 1966. The labor force increased 3.4 percent, or 244,000. Unemployment was reduced by 72,000 persons during 1966. Total employment increased by 316 thousand jobs or 4.6 percent over 1965. Of these, manufacturing added 84,000 new jobs.

Agriculture plays an important role in California's economy despite the state's large employment in industry. Cash farm receipts exceeded $3 billion in 1965. Over two hundred different crops are raised on approximately 37 percent of the lands. Principal crops are cotton, alfalfa, and other hay, tomatoes, lettuce, oranges, barley, rice, peaches, potatoes and sugar beets. Livestock and livestock products rank first among all farm products produced. Currently, 37 million acres are farmed in California on 80,846 farms. Irrigated farm land accounts for 7 percent of the state. By 1980, agricultural crop acreage is projected to increase by more than 650 thousand acres, yet there will be fewer farmers. The number of farmers declined from 11 percent of the state's population in 1940 to 2.7 percent in 1963. However, the acreage farmed increased 6 million acres during the same period.

The four aerospace industries - ordnance, aircraft, electrical equipment and instruments - while of major importance to the state's economy in terms of employment and value added, employed only 5 percent of the total employment in 1965.

Development of the state's water plan to its maximum potential between 1966-1985 will cost approximately $29 billion dollars. More than two hundred projects are planned for construction and development. Full development will help bring into balance the maldistribution of water in the state.

Estimated water yield from BLM-administered lands is slightly more than 2 million acre feet of runoff per year. Compared with the state's total runoff of 76 million acre feet per year, BLM lands account for 2.7 percent. BLM's goal is to not only improve water quality statewide, but to increase water quantity by eradication of chaparral in brush areas and conversion to grass.

Industries supporting California's economy are: agriculture, manufacturing, mining, petroleum and gas, fishing, forestry and lumber, world trade, recreation and tourism, research and development, management headquarters, motion pictures, radio and TV, wholesale trade, and government. Of these, forestry and lumber, agriculture, mining and petroleum and gas, recreation and tourism utilize products from the public lands.

BLM has a dual role in California's economy in that (1) resources from lands under its administration contribute significantly to several industries in the state, and (2) the public domain lands comprise a reservoir of resources for future use. Management becomes extremely critical, crucial, and a challenge in order to meet expanding population, tourism, mining, agriculture, defense, and urbanization.

BLM has invested more than $2 million in resource development and conservation of its range and forest resources since 1934. Range user's of the public domain have contributed an additional $1.1 million. From 1940 to 1966, more than $182 million were collected in cash receipts from the public lands administered by the Bureau. California has received $82,384,910 as its share of these receipts.

By 1980, increased demand for forest products on all Federal forests as private holdings shrink, will demand increased production from BLM's forested lands. BLM has the potential to nearly double its current production of approximately 50 M board feet of sawtimber. However, its ability to meet expected forest product demand will depend on (1) acquisition of legal access to its forests, (2) receiving adequate funds and manpower to intensively manage its forest resources, and (3) identify the public domain forests by cadastral survey.

BLM administered rangelands of the state occupy an important role in the local economies. However, by 1980 it is expected that because of competition from other uses of the public lands such as recreation, open space, and water developments, the increased demand for rangeland products will have to be produced on fewer acres. Management practices such as water developments for better livestock distribution and utilization of forage resources, removal and eradication of non-productive brush, planting of improved grass and browse species, and construction of dams for soil development and prevention of flood damage must be accomplished for BLM to meet expected livestock demands.

Use of California's lands for hunting is expected to increase from 6 million hunter days in 1966 to more than 7.5 million in 1980. BLM lands will be expected to provide more than 1.1 million of the estimated total. Angler-days are expected to increase from a present 20 million to in excess of 34 million by the year 1980. A conservative 702 thousand fishing days will be expected to be provided by BLM.

The present demand for outdoor recreation facilities on public lands in California exceeds the supply by nearly 800 percent based on an assumption of serving 40 percent of the recreation users of public domain lands. At the present time, BLM has facilities to serve approximately 5 percent of the visitors, whereas the National Park Service approaches 90 percent. The demand for facilities by 1980 will exceed existing facilities by 2400 percent, or 24 times the number of existing facilities.

Management of recreation activities is a major problem facing public domain lands in California. By acquiring public access to blocks of public lands BLM can double the amount of usable recreation acreage on its lands.

An immediate need exists for a coordinated planning, development, maintenance, and management program to control recreation use on public domain lands in California. If such a program is not undertaken at once the problem by 1980 will be overwhelmingly out of control.

California's pattern of land ownership has evolved from various transactions among federal, state, other public and private owners. Future demands for public lands if population projections prove accurate, will continue to require lands to satisfy needs for school sites, dump sites, airports, and other purposes. Thousands of additional acres will be required to meet anticipated needs of the State. Substantial acreage will be needed for water project development as Federal-State agency planning continues.

California has an abundance of mineral resources, yet it does not produce enough minerals to be self sufficient. The State is therefore a net importer of finished mineral products, mineral fuel production is particularly short in supplying total demand. At the present time, BLM lands produce 5% of the State's total mineral production. Mineral production from the public domain lands continues to increase, and by 1980, the minerals industry will look to BLM-administered lands for even more of its raw mineral resources. Increases are expected in petroleum, natural gas, potash, sodium, gypsum, and sand and gravel. Future production of mineral resources from BLM lands would be substantially increased upon resolution of mining law conflicts.

Of all the resources administered by the Bureau of Land Management, the most valuable is the land itself. Demands for lands and the use of the public lands are certain to increase if population projection is proved correct. Urbanization, industrial growth, reclamation projects, --- can all be expected to place increasing demands on the public domain. Indications are that by 1980 there will be an increasing need for all the end products from the public domain land. Production of resource products therefore should be consistent with consumer demands.

INTRODUCTION AND BACKGROUND

I. INTRODUCTION AND BACKGROUND

A. Purpose, Use, and Scope of the Economic Profile

The Economic Profile is a general study of California's economy and identifies and describes the major economic characteristics of the State. The intent of the profile is to describe the present level of the California economy and its relationship to the public lands administered by the Bureau of Land Management in California. The profile provides an understanding of BLM's relation to California's economy by identifying BLM's economic role, and measures, insofar as possible, the economic impact of BLM programs. Future use of this economic profile will be by BLM personnel making program decisions involving California's public lands. These personnel include the California State Director, District Managers, Area Managers and key personnel in the State and District offices. Washington Office and Service Center program personnel, as well as other persons interested in BLM operations in California, may also find it useful.

The profile will provide the projected needs of a select group of basic industries which are important users of the production from BLM administered lands. These industries are: wood products, agriculture, recreation/tourism, and minerals. Facts and analysis relating to water and wildlife resource development, flood damage mitigation and watershed production are also included.

In order to facilitate future BLM programming in California, the level of economic activity is projected to 1980. Projected levels of social and economic growth are related to the anticipated demands for timber products, forage, recreation, minerals, water, etc. It does not, however, identify the amount of each resource product that should be provided by 1980 but does chart the course and direction for policy guidance to meet future resource requirements. BLM's resource management and development program to meet these projected social and economic needs will, of course, depend on the capacity of the basic resource, with consideration given to the maximum productivity of the land to produce the resource along with consideration given to efficiency of production.

Recognition, however, must be made of the fact that the Economic Profile is not a refined, precise guide that will provide the in-depth, "micro economic" studies that will measure product maximization or the maximizing of benefits. In this regard, it is assumed that BLM, through use of the Planning-Programming and Budgeting system will back up the profile with quantitative, in-depth studies of individual resources.

The profile is based primarily on secondary data with credit given, as appropriate. One of the main objectives of the profile was to search out, review, and pull together in a useable form, existing source data that would serve as a broad basis for program planning.

One of the important end-products of the profile is a comprehensive bibliography of available studies and data sources which have direct relevance to BLM decisions with respect to dispostion or management in the public interest. The footnote citations, and the material listed in the bibliography, provide the primary reference sources for future in-depth studies of individual resource output areas as demanded. Where possible the data cited is listed by county or BLM district. By doing this, the report should be more useful since appropriate counties can be grouped together to form geographic units with similar economic impact.

B. Physical Characteristics of California

1. Location, Topography, and Climate - California, with a total area of 158,300 square miles and a length of more than 800 miles, varies widely in physical conditions and climate. The State has more than a thousand miles of shoreline along the Pacific Coast, and the topography is more diversified than that of any other State except Alaska. Elevations range from 282 feet below sea level in Death Valley (the lowest point in the United States) to 14,495 feet above sea level at the top of Mt. Whitney (the highest point in the United States outside of Alaska). 1/ Figure 1 delineates the variations in physical characteristics.

California's topography is characterized by two extensive mountain ranges and a broad, low-lying valley between them. These mountain ranges converge in the north and in the south as shown in figure 1. The Coast Ranges parallel the Pacific Coast, rising to elevations of several thousand feet a short distance inland. These coastal mountains separate the generally narrow coastal plain from the Central Valley of the Sacramento-San Joaquin River systems. The Cascade-Sierra Nevada ranges also generally parallel the coast, but at a distance of from 100 to 150 miles inland. They rise to elevations of 5,000 to 10,000 feet or more.

The 1959 U.S. Census of Agriculture indicates that 36.8 percent of California's total land area is in farms. The great Central Valley contains much of the rich agricultural land. Except for a narrow gap through which the Sacramento-San Joaquin Rivers flow into the Pacific Ocean, the Central Valley is completely enclosed by mountains. The valley is nearly 500 miles long and averages about 120 miles in width.

GEOMORPHIC PROVINCES

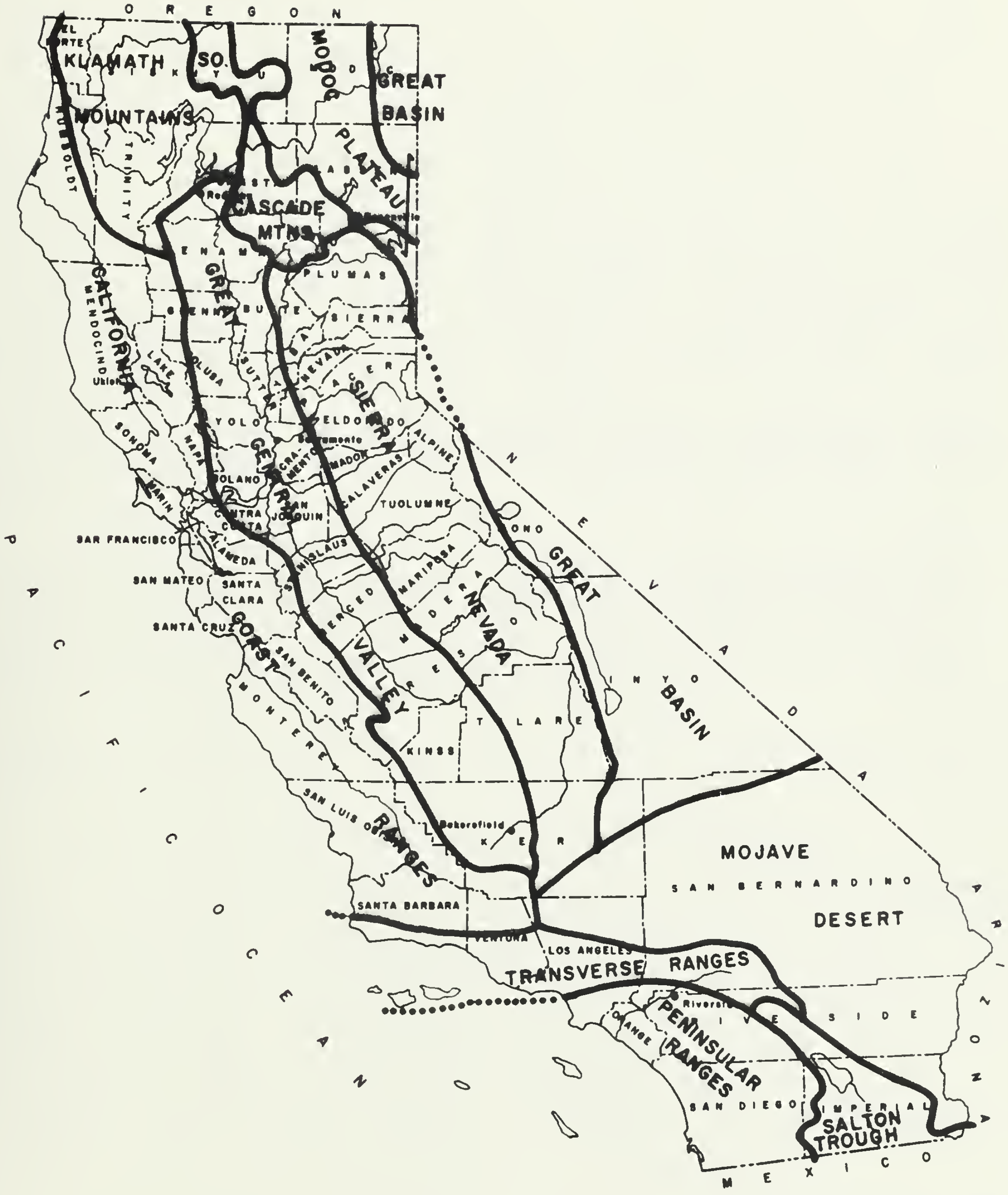


FIGURE 1

California's climate ranges from subtropical to arctic. The California coast and the valleys leading to the interior from the coast are bathed in cool sea air during the summer months, while the interior portions swelter under high temperatures. In winter the ocean areas remain warmer than the interior. The annual temperature for the State averages about 58°F, but extremes range from 134°F in Death Valley to -45°F in the high Sierra Nevada Mountains. Precipitation falls in the Pacific coastal agricultural regions, the freeze-free season ranges from 365 days a year on the extreme south coast to 260 days on the north coast. Average precipitation over the State is about 23 inches annually, with a range in individual years from about 11 to 37 inches. Statewide, the precipitation ranges from an average of 110 inches in the north coast ranges to less than two inches in the southeast desert basins. 1/

Within the State's borders lie 28,000 lakes, 26,000 miles of streams, and 1,200 miles of beaches, harbors and rugged coastline, but with all this water, the State is still short of water.

2. Soils and Vegetative Cover - California has a wide variety of soils and vegetation. Much of the land area in the north and along the east side of the State is covered by dense brush fields along the foothills and in the desert. Much of the lands administered by BLM is within the foothill brush areas and desert areas of the State.

Figures 2 and 3 show the soil regions and general vegetation in the State.

C. Ownership and Administration of California Lands

1. California's land and water area totals 156,573 square miles, or 100,206,720 acres. BLM administers 14,969,268 acres or approximately 15 percent of the total area. 2/ Table 1 shows major land ownership in the State. Over 45 million acres of the grassland area in California are owned and managed by federal agencies. BLM is second to the U.S. Forest Service in being the largest public land holding agency in California. The largest BLM land holdings are in San Bernardino, Inyo, Riverside, and Lassen Counties. Table 2 shows the BLM administered lands by county and BLM district. General location of the Federal lands in California is shown page 8A.

2. Land Use and Capability - Much of the land area of the State will remain in a "state of nature" for many decades, producing forage, timber, minerals, watershed protection, wildlife habitat and recreation. At the present time, more than

SOIL REGIONS

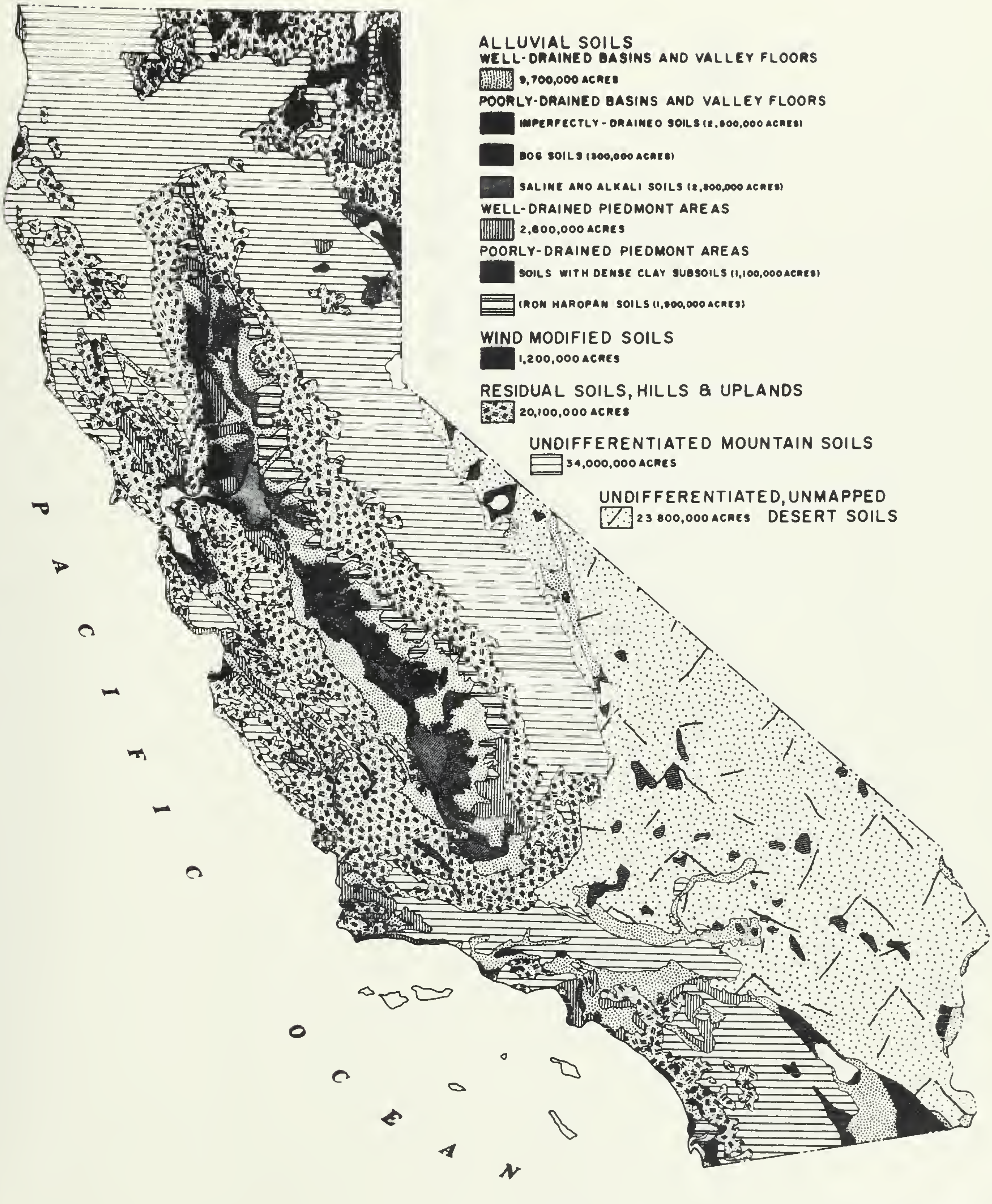

ALLUVIAL SOILS
WELL-DRAINED BASINS AND VALLEY FLOORS
9,700,000 ACRES
POORLY-DRAINED BASINS AND VALLEY FLOORS
IMPERFECTLY-DRAINED SOILS (2,800,000 ACRES)
BOG SOILS (300,000 ACRES)
SALINE AND ALKALI SOILS (2,800,000 ACRES)
WELL-DRAINED PIEDMONT AREAS
2,600,000 ACRES
POORLY-DRAINED PIEDMONT AREAS
SOILS WITH DENSE CLAY SUBSOILS (1,100,000 ACRES)
IRON HARDPAN SOILS (1,900,000 ACRES)
WIND MODIFIED SOILS
1,200,000 ACRES
RESIDUAL SOILS, HILLS & UPLANDS
20,100,000 ACRES
UNDIFFERENTIATED MOUNTAIN SOILS
34,000,000 ACRES
UNDIFFERENTIATED, UNMAPPED DESERT SOILS
23 800,000 ACRES
PACIFIC
OCEAN

FIGURE 2

VEGETATION

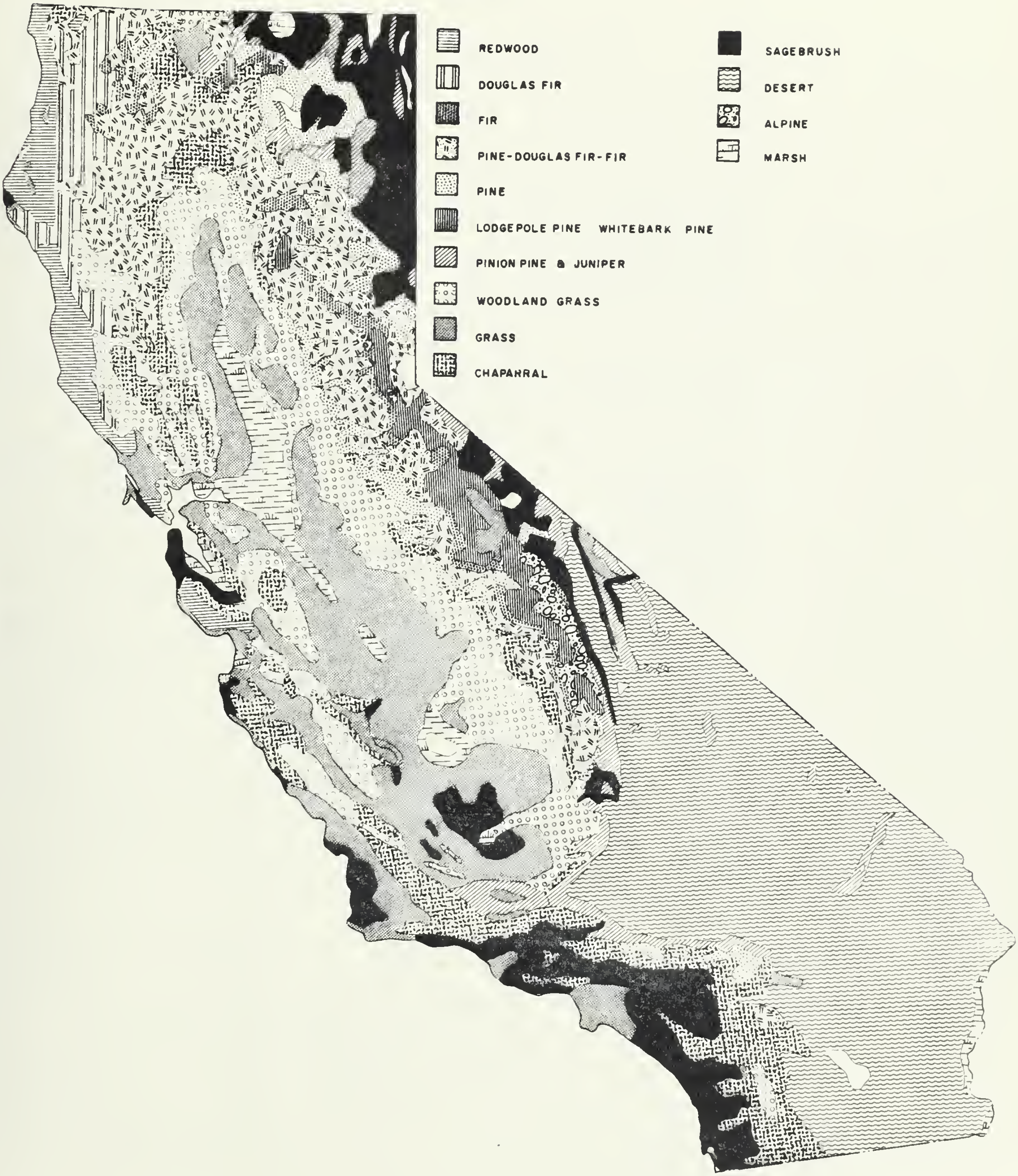


FIGURE 3

TABLE 1

Land Status - California

Federal	Acres	
Department of the Interior		
Bureau of Land Management	14,696,268	
Bureau of Reclamation	1,105,443	
Fish and Wildlife Service	75,231	
Bureau of Indian Affairs	546,664	
National Park Service	4,060,941	
Other	76	
Department of Agriculture		
Forest Service	19,970,522	
Other USDA agencies (ASCS & SCS)	630	
Department of Defense		
Army	1,061,906	
Air Force	515,938	
Navy	1,913,365	
Marine Corps	732,698	
Corps of Engineers	96,674	
Treasury Department		
Coast Guard	2,722	
Bureau of Customs	*	
Atomic Energy Commission	17,335	
Department of Justice		
Bureau of Prisons	56	
Immigration & Naturalization Service	21	
Other Civil Agencies (Federal)	6,892	45,076,382
State of California		
Department of Conservation (Forestry Division)		
(Forestry Division)	74,034	
Department of Parks and Recreation	696,918	
Department of Fish and Game	115,329	
Department of Water Resources	55,572	
Reclamation Board	12,542	
Other State Agencies	999,061	1,953,456
Private	53,176,882	53,176,882

* Less than one (1) acre.

TABLE 2

Page 1 of 2 pages

LANDS ADMINISTERED BY BLM IN CALIFORNIA COUNTIES

County	BLM Districts 01	02	03	04	05	06	BLM Total	County Total	BLM
Alameda								469,120	.0
Alpine				18,209			18,209	462,720	.03
Amador				6,383			6,383	379,520	.02
Butte			19,245				19,245	1,064,320	.02
Calaveras				29,271			29,271	657,240	.04
Colusa					31,440		31,440	737,920	.04
Contra Costa				423			423	469,720	*
Del Norte					743		743	641,920	*
El Dorado				14,081			14,081	1,096,960	.01
Fresno				111,150			111,150	3,816,960	.03
Glenn			14,321				14,321	842,880	.02
Humboldt					12,740		12,740	2,286,720	.01
Imperial						391,792	391,792	2,741,760	.14
Inyo	2,270,438						2,270,438	6,458,240	.35
Kern	533,001						533,001	5,217,380	.10
King	5,365						5,365	892,800	.01
Lake					99,511		99,511	803,840	.12
Lassen		1,044,168					1,044,168	2,910,080	.35
Los Angeles	24,148						24,148	2,598,400	.01
Madera				52,124			52,124	1,372,160	.04
Marin								332,800	*
Mariposa				52,359			52,359	931,200	.06
Mendocino					117,572		117,572	2,244,480	.05
Merced				10,665			10,665	1,268,480	*
Modoc		271,068					271,068	2,618,800	.10
Mono	298,120						298,120	1,937,920	.15
Monterey				64,309			64,309	1,127,360	.03
Napa					43,899		43,899	485,120	.09
Nevada				14,888			14,888	625,920	.02

* Less than 1%

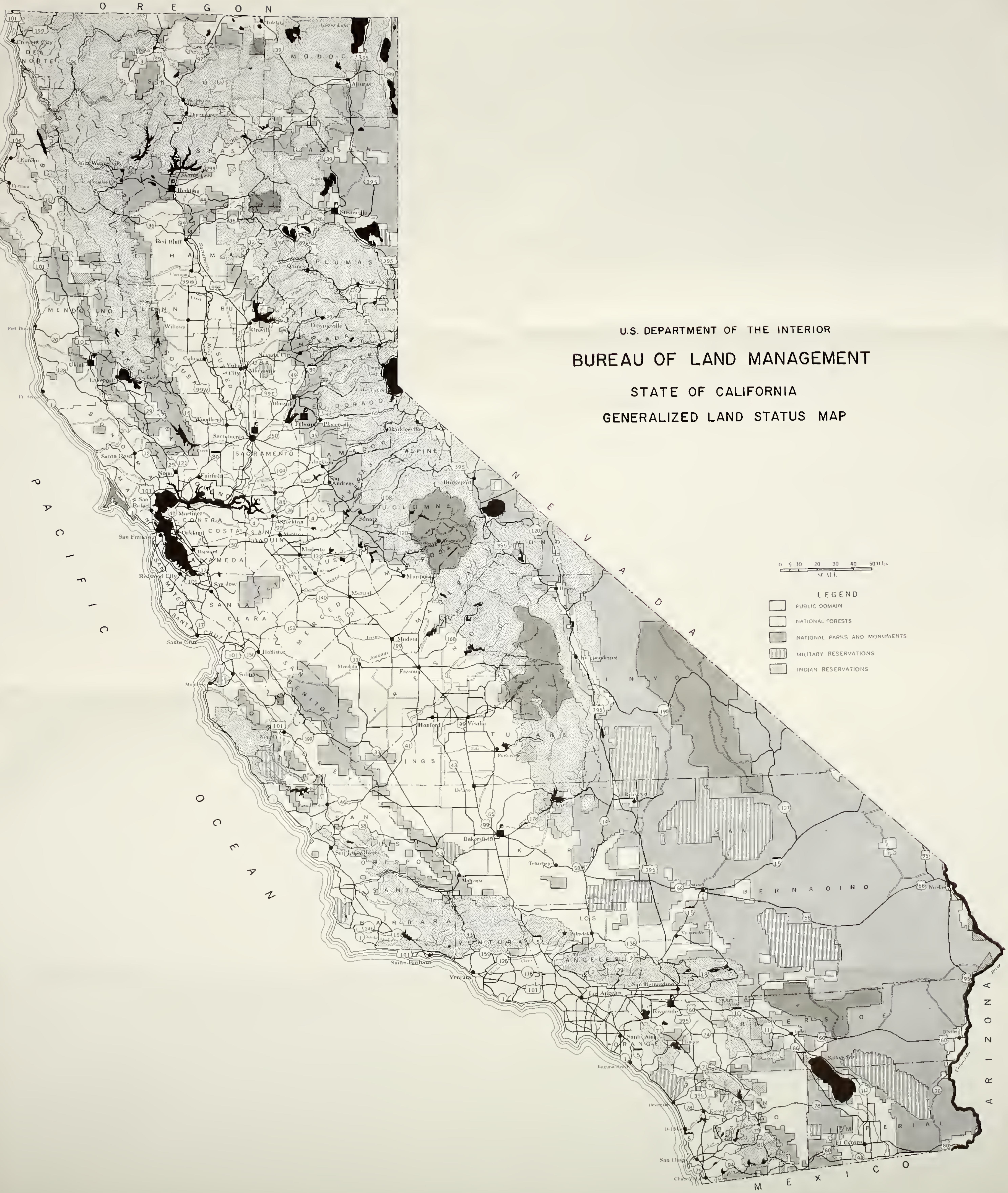
TABLE 2

LANDS ADMINISTERED BY BLM IN CALIFORNIA COUNTIES

County	BLM Districts						BLM Total	County Total	BLM
	01	02	03	04	05	06			
Orange						1	1	500,480	*
Placer				11,479			11,479	911,360	.01
Plumas		7,902					7,902	1,644,800	*
Riverside						1,419,154	1,419,154	4,593,280	.30
Sacramento				17			17	629,120	*
San Benito				102,494			102,494	893,440	.11
San Bernardino						7,035,092	7,035,092	12,883,840	.55
San Diego						193,484	193,484	2,723,200	.07
San Francisco								28,800	.0
San Joaquin								901,760	.0
San Luis Obispo	71,871						71,871	2,122,240	.03
San Mateo								290,560	.0
Santa Barbara	12,572						12,572	1,752,320	.01
Santa Clara				8,585			8,585	833,280	.01
Santa Cruz				151			151	280,960	*
Shasta			159,977				159,977	2,430,720	.07
Sierra		8,929					8,929	613,120	.01
Siskiyou			77,990				77,990	4,039,680	.02
Solano					7,926		7,926	1,010,560	.01
Stanislaus				9,350			9,350	960,000	*
Sutter								388,480	*
Tehama			39,880				39,880	1,904,640	.02
Trinity			67,600				67,600	2,042,240	.03
Tulare	111,367						111,367	3,096,320	.04
Tuolumne				33,116			33,196	1,455,360	.02
Ventura	3,837						3,837	661,760	.05
Yuba				3,161			3,161	407,680	*
Totals	3,130,719	1,332,067	379,013	542,215	345,741	9,039,512	14,969,267	100,206,600	

* Less than 1%.

8A GENERALIZED LAND STATUS MAP



U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

STATE OF CALIFORNIA

GENERALIZED LAND STATUS MAP

42 percent of the State's land area is forest land; 12.9 percent is under cultivation. Only 2 percent of the total land area is committed to urban use despite California's rapid urbanization and economic growth. Table 3 summarizes the major land use classes.

Table 3 - California Land Areas by Major Class of Land 3/

Class of land	Acres
Total	100,207,000
Forest land	42,541,000
Commercial[a]	17,391,000
Productive-Reserved[b]	1,194,000
Unproductive[c]	23,956,000
Crop land[d]	12,966,000
Urban and Suburban land[e]	2,100,000
Other land[f]	42,600,000

---

a. Forest land which is producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation.

b. Productive public forest land withdrawn from timber utilization through statute or administrative regulation.

c. Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

d. As reported by 1959 Census of Agriculture. Excludes land cultivated in developing improved pasture.

e. Residential areas containing at least 5 homes, with a density of one home or more on each two acres; industrial and commercial development, alone or in combination with residential development; and the activity occupied portions of military reservations--as delineated by land and water use specialists of the Department of Water Resources.

f. Includes productive grazing land - private, State and Federal.

General land use changes over the decades have resulted in many areas formerly under cultivation being converted to urban use. If history is a forecaster of future land changes, basic conclusions can be made that continued population increases will show two areas dominating the urban-economic growth scene. These are (1) the southern California metropolis (Los Angeles, Orange, Ventura, Santa Barbara, San Diego, Riverside and San Bernardino Counties) and (2) the northern California metropolis (San Francisco, San Mateo, Santa Clara, Alameda, Marin, Solano and Contra Costa Counties). Self-contained urban complexes are also expected to emerge in and around Sacramento, Fresno

and Bakersfield. An adequate supply of water will hold the key to the realization of the full social and economic capabilities of these other areas in the State. As the urbanization and economic growth forces proceed, new types of demands will be placed upon the open space and the resource outputs of the public domain.

D. Economic History of the State of California

The spectacular development of the State of California began in 1848 with the discovery of gold on the American River, near Sacramento.

The year 1869 marked the completion of the first transcontinental rail link and the opening of a new era of development for the West. The completion of a rival line in 1885 led to rate wars and these low fares allowed the first great influx of population, which has continued to the present, to Los Angeles and other southern California communities.

In 1892, the commercial development of petroleum had begun and discovery of the Los Angeles basin oil fields followed shortly thereafter.

The year 1915 was another important date in the economic history of the State, when the opening of the Panama Canal provided new links of water transportation between the east and west coast ports.

The years between 1910 and 1915 marked the beginning of the modern phase of California's economic history. This period included the greatest expansion in irrigated agriculture, the beginning of the automotive and airplane age, rapid growth of the oil industry, the start of the motion picture industry and broadening of the economic base to include manufacturing on a large scale.

THE CALIFORNIA ECONOMY: 1940 - 1980

II THE CALIFORNIA ECONOMY: 1940-1980

A. Economic Highlights

The California economy is a study in diversity. With 19.0 million persons in 1966, the State ranks as the most populous in the Nation. At the same time, California ranks as the leading agricultural State, both from the point of view of total dollar value of farm output and the variety of items produced. The State ranks second to New York in manufacturing. Over one million new jobs have been created in manufacturing industries since 1940. In other words, California's economy is becoming highly urbanized and industrialized. Yet, agricultural production maintains its position as an important element in the total economic picture. Cattle rank first in value among the major farm products produced. In 1962, the value of cattle produced totalled nearly $600 million, well ahead of dairy production valued at $400 million. More than one-third of California's employed population are employed in Agriculture or Agricultural related jobs. Resource-oriented industries are an important element in the total economy. Only Texas and Louisiana rank ahead of California in oil and gas production. Annual production in recent years has been valued in excess of $1.0 billion. A wide variety of minerals are produced. These range from the gypsum used to augment agricultural production to the rare earths which are proving to be indispensable to the metallurgy of the Space Age.

California ranks second in the Nation in timber production, with Oregon ranked first. Over 5 billion board feet, with an on-site value well in excess of $80 million, are cut annually.4/

Tourism and recreation are also important elements in the economic picture. California's 19 million population is outdoor recreation conscious. More than six million tourists visit the State each year. These visitors add over $1 billion to the State economy annually.

It is abundantly clear that the resource output areas within the sphere of Bureau of Land Management concerns namely, recreation, forage, wood products, and minerals, and are an integral part of the California economy. Future BLM implementation of the multiple use principle must be formulated in terms of the important role of the natural resource industries in the State.

B. California in Relation to the Economy of the 11 Western States and the Nation

When measured in terms of population, employment, value of output and rate of growth, California dominates the western

economic scene and adds significantly to the economic output and level of employment in the Nation.

California accounts for 9.7 percent and 57 percent of the population of the U.S. and the 11 western states, respectively, as shown in Table 4. Over 50 percent of the employment in the west is located in California. The State's annual population growth of between 500,000 and 600,000 is in excess of that of all the other 10 western states combined. 5/

California accounts for 11 percent of the Nation's total personal income; the Gross State Product for 1965 was $75 billion according to the California Statistical Abstract. (See Part II, F.4, for more detail).

Not only is California an important product on-distribution center for the western states, its aircraft, electrical equipment, electronic devices, instruments, petro-chemicals, lumber and wood products. defense and space goods, agricultural products and processed foods, and chemical products are sold in national and international markets. California's world trade, almost equally divided between exports and imports, is in excess of $4 billion annually. Major exports include: aircraft and parts borax, chemicals, citrus and fresh fruit, cotton, electrical equipment, fruits and vegetables (canned and dried), hides and skins, industrial machinery, petroleum products, potash and scrap metal. Major imports are: automobiles, bananas, copra, coffee, crude petroleum, fish and meat products, liquors and spirits, newsprint and paper, plywood and lumber, rubber, steel products and textiles.

The four aerospace industries, ordnance, aircraft, electrical equipment and instruments, employed 481,300 persons in 1965. These industries accounted for 8.3 percent of total nonagricultural employment and 34.2 percent of manufacturing employment in the State in 1965. 6/

C. The Economic Impact of Government Programs on the State Economy.

Federal government spending on defense goods and services brings billions of dollars into the California economy each year. In recent years, 20 percent of all prime defense contracts were awarded to California firms; 46 percent of NASA spending has been with firms located in California. The State's transition from an agricultural to an urban-industrial economy within the past 25 years has been influenced by defense expenditure programs. 7/

In 1965, employment by Federal, State, and local units of government ranked first among the major industry groups in number of new jobs and rate of growth. Employment in the

TABLE 4

POPULATION GROWTH OF CALIFORNIA, WESTERN UNITED STATES, AND THE TOTAL UNITED STATES

State	1940	1950	1960	Projections 1970-1980*		
				1970	1975	1980
Arizona	499,261	749,587	1,302,161	1,943,000	2,229,000	2,516,000
California	6,907,387	10,586,223	15,717,204	20,925,000	23,650,000	26,597,000
Colorado	1,123,296	1,325,089	1,753,947	2,199,000	2,380,000	2,570,000
Idaho	524,873	588,637	667,191	734,000	780,000	830,000
Montana	559,456	591,024	674,767	741,000	775,000	813,000
Nevada	110,247	160,083	285,278	491,000	497,000	509,000
New Mexico	531,818	681,187	951,023	1,138,000	1,296,000	1,454,000
Oregon	1,089,684	1,521,341	1,768,687	1,989,000	2,094,000	2,212,000
Utah	550,310	688,862	890,627	1,119,000	1,225,000	1,336,000
Washington	1,736,191	2,378,962	2,853,214	3,162,000	3,383,000	3,623,000
Wyoming	250,742	290,529	330,066	365,000	389,000	416,000
Total	13,669,275	19,561,524	26,777,165	34,806,000	38,708,000	42,876,000
United States	131,669,275	150,697,361	179,323,175	205,139,000	218,108,000	232,393,000
% of 11 Western States of the Total U.S.	10.54%	12.9%	14.93%	16.9%	17.75%	18.45%

Source: World Almanac for 1963, p.255

* Bureau of the Census, Series P-25, No. 326, Feb. 7, 1966, based on Series ID projections

government sector increased from 266,000 in 1940 to 1,183,000 in May 1966. During 1965, 61,000 new jobs were created in the government sector. 7/

1. Net Capital Investments - Capital investments by government agencies are in many forms, including investments in structures, land and resource improvements. Net capital investments by the Federal government during the period 1950-1961 approximated $2.7 billion. Table 5 summarizes net capital investments for all levels of government by functional categories for the period 1950-1961. Total Federal expenditures during this period approximated 20 percent of the total. Investments by BLM during this 11 year period were primarily in the conservation category. It is notable that net capital investments in conservation ranked second among investments made by the Federal government.

2. Investments and Receipts - BLM Administered Lands - BLM's investment in various resources over the years is summarized in Table 6. Investments have been in the form of resource development and conservation of the range and forest resources administered by BLM. Table 6A summarizes BLM investments in its forest resources - 1958-1967.

Table 7 summarizes the 1966 cash receipts from BLM administered lands in California. These figures show that the receipts from the public domain lands far exceed the monies appropriated for their administration. The table shows the sources of these receipts. 8/

3. Payments to California - BLM Administered Lands - As provided by law, California receives a large sum of money from the resources produced on BLM administered lands. Through 1966, the amount returned to the State totalled $82,384,910. The source of these funds and year of distribution is shown in Table 8.

4. HHFA - 701 Grants - Federal grants for State, Regional, County and City planning is of interest to BLM through its land classification activities authorized by the 1964 Classification and Multiple Use Act. Master planning by counties and the State is prerequisite to land classification by BLM for disposal or sale of lands under the 1964 Public Sale Act. By Instruction Memo from the Director, Bureau of Land Management, State Directors were advised that BLM would encourage and extend assistance to states, counties, and local governments in comprehensive planning. One of the criteria established by the Secretary of the Interior for BLM guidance in land classification is that:

"All land classification must be consistent with

TABLE 5

NET CAPITAL INVESTMENT BY LEVELS OF GOVERNMENT AND BY FUNCTIONAL CATEGORIES FOR THE WHOLE PERIOD 1950-1961

(Entries in millions of dollars)

Row no.	Functional categories	Federal			State			Local			Totals		
			Percentages			Percentages			Percentages			Percentages	
		Dollars	Row	Col.	Dollars	Row	Col.	Dollars	Row	Col.	Dollars	Row	Col.
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
1	Highways	1,033.2	23.4	38.8	3,110.1	70.4	54.5	272.7	6.2	4.7	4,416.1	100.0	31.2
2	Airports	28.7	65.1	1.1				15.5	34.9	.3	44.2	100.0	.3
3	Harbors	57.8	33.8	2.2	.2	.1		113.1	66.1	2.0	171.1	100.0	1.2
4	Transit							63.7	100.0	1.1	63.7	100.0	.5
5	Water				133.2	22.9	2.3	1,114.8	77.1	16.1	1,248.1	100.0	8.9
6	Sanitation	8.3	3.2	.3				247.3	96.8	4.3	255.5	100.0	1.8
7	Health	56.1	17.4	2.0	189.9	58.9	3.3	76.6	23.7	1.3	322.6	100.0	2.3
8	Welfare							46.6	100.0	.8	46.6	100.0	.3
9	Education	138.0	3.0	5.2	1,762.5	39.0	30.9	2,623.9	58.0	45.5	4,524.4	100.0	32.0
10	Recreation	18.3	7.8	.7	89.5	37.9	1.6	128.2	54.3	2.2	235.9	100.0	1.7
11	Conservation	994.5	71.9	37.3	88.1	6.4	1.5	300.8	21.7	5.2	1,383.5	100.0	9.8
12	Atomic Energy Commission	96.1	100.0	3.6							96.1	100.0	.6
13	National Aeronautics & Space Agency . .	95.6	100.0	3.6							95.6	100.0	.6
14	Housing and Home Finance Agency . .	52.6	100.0	2.0							52.6	100.0	.4
15	Protection-correction				148.3	46.7	2.6	169.4	53.3	2.9	317.6	100.0	2.2
16	General government .	86.6	15.7	3.2	121.4	21.9	2.1	345.3	62.4	6.0	553.3	100.0	3.9
17	Not classified . . .				58.6	18.3	1.2	261.7	81.7	4.5	320.3	100.0	2.3
18	Totals	2,665.9	18.8	100.0	5,702.0	40.3	100.0	5,779.5	40.9	100.0	14,147.3	100.0	100.0

Source: Public Capital Investment in California 1950-1961, Alfred W. Baxter, Jr., and Associates, Lafayette, California, November 1963, p. 47.

TABLE 6

INVESTMENTS MADE IN CALIFORNIA'S BLM-ADMINISTERED LANDS FOR DEVELOPMENT AND CONSERVATION OF THE RANGE RESOURCE (1934-1965)[1]

Item	Unit	Amount	BLM $'s	Contributed $'s
Brush Control	acres	92,800	287,747	24,943
Fencing	miles	16,529	319,969	581,725
Seeding	acres	81,687	410,804	109,201
Reservoirs	each	620	174,884	112,610
Other Water Developments (Springs, Wells, etc.)	each	220	95,137	158,609
Cattleguards	each	86	8,114	14,536
Truck & Stock Trails	miles	2,326	8,482	26,232
Dikes, Ditches & Diversions	cu.yds.	9,885	1,788	1,488
Waterspreading	acres	1,100	none	[2]
Corrals	each	92	15,496	45,632
TOTALS			$1,322,421	$1,074,976

---

[1] Data for 1966 & 1967 not available at time of this report.

[2] Costs unknown; work completed under cooperative agreement at no cost to BLM.

TABLE 6A

Forest Development Program

F.Y.	Forecast Development Appropriation	Thousand Trees Planted	Acres Planted	Acres Seeded	Acres of Site Improvement
1958					
1959	$ 10,000	122	--	--	--
1960	9,180	177	--	--	
1961	25,000	217	--	--	162
1962	35,000	283	--	--	572
1963	100,000	728	--	--	2,749
1964	127,000	840	3,833	233	1,548
1965	176,000	1,733	3,507	81	2,957
1966	170,000	845	1,460	37	1,104
1967	165,000	1,026	1,860	300	300
TOTALS	$817,280	5,971	10,660	651	9,392

1958 was the first year California-BLM received forest development funds

Definitions and Explanations:

Thousand of trees planted - Seedlings from Forest Service nursery, one and two year old stocks in thousands.

Acres Planted - Previously unstocked acres on which seedlings were planted to provide adequate stocking.

Acres Seeded - Previously unstocked acres which were seeded with tree seeds in order to secure adequate stocking.

Acres Site Improvement - Site improvement involves the mechanical removal or chemical eradication of brush and other undesirable vegetation. Removal or reduction of the undesirable vegetation reduces competition so that the site may be planted and/or seeded to desirable species.

TABLE 7

CASH RECEIPTS FROM BLM-ADMINISTERED LANDS AND RESOURCES IN CALIFORNIA - 1940 to 1966

Year	All Mineral Receipts	Timber Sales	Public Land Sales	Grazing Sec. 3	Grazing Sec. 15	Fee and Commissions	Rights of Way	Land Rentals	All Other	TOTAL
1940	1/									
1941	1/									
1942	2,047,660	2/	34,225	3/	16,025	8,061	2/	2/	8,437	2,114,407
1943	2,716,202	2/	28,166	3/	17,296	6,575	2/	2/	7,553	2,775,792
1944	1/									
1945	3,486,813	2/	15,803	3/	25,533	8,200	2/	2/	11,594	3,547,944
1946	3,675,075	2/	21,642	3/	22,992	12,383	2/	2/	12,943	3,745,035
1947	5,173,023	2/	12,498	17,396	21,953	22,618	2/	2/	28,434	5,275,922
1948	7,346,792	2/	27,694	30,253	29,789	15,068	2/	2/	57,109	7,506,704
1949	8,140,519	30	80,754	27,733	35,807	39,534	4,054	93,852	33,021	8,455,303
1950	8,031,528	47,822	119,134	31,112	31,613	86,266	9,366	101,989	702	8,459,531
1951	8,836,600	48,106	128,079	34,996	61,930	53,083	8,410	70,035	3,698	9,244,936
1952	8,260,335	278,322	164,437	44,616	62,992	69,918	8,453	61,804	5,313	8,956,190
1953	8,795,863	144,307	236,490	41,900	66,554	56,619	8,653	59,098	3,547	9,413,030
1954	10,069,057	126,428	177,156	41,124	60,653	64,098	14,869	65,100	50,381	10,668,867
1955	1/									
1956	1/									
1957	9,425,247	391,222	691,872	54,410	70,065	175,641	13,222	124,278	2,638	10,948,839
1958	9,823,082	275,488	674,901	66,253	62,513	166,385	12,967	71,876	4,647	11,158,111
1959	8,584,646	699,705	931,005	73,589	73,081	143,977	14,300	31,668	8,738	10,560,709
1960	7,619,584	560,710	1,334,130	75,400	93,320	100,201	15,702	22,869	5,518	9,827,434
1961	8,124,213	538,512	1,823,160	68,050	82,169	84,835	21,660	8,041	13,092	10,763,732
1962	7,429,528	457,956	979,859	49,965	79,358	83,740	23,064	4,863	12,327	9,120,670
1963	7,369,764	531,482	892,473	80,704	88,277	61,042	36,648	9,423	25,451	9,095,264
1964	8,436,659	771,163	869,835	90,748	108,677	54,406	87,103	18,390	54,757	10,491,738
1965	7,735,010	584,286	1,189,964	71,002	88,083	77,907	34,343	15,599	71,144	9,867,338
1966	8,774,918	1,021,364	439,110	82,439	107,551	55,575	44,879	11,218	56,731	10,593,785
TOTALS	159,902,118	6,476,903	10,872,387	981,690	1,306,231	1,446,132	357,693	770,103	477,775	182,591,281

1/ Not available
2/ Not given
3/ Not separated into sections

Source: Public Land Statistics

TABLE 8

PAYMENTS TO THE STATE OF CALIFORNIA FROM PUBLIC LAND REVENUES

SOURCE OF PAYMENTS

Year	Public Land & Timber Sales	Mineral Leases and Permits	Taylor Grazing Districts	Taylor Grazing Leases	Total
1803-1964	1,794,696				1,794,696
1920-1964		73,707,999			73,707,999
1934-1964			209,015	643,955	852,970
1965	70,970	2,675,480	5,914	44,042	2,796,406
1966	58,419	3,113,774	6,870	53,776	3,232,839
TOTAL	1,924,085	79,497,253	221,799	741,773	82,384,910

Note: Statistical data presented in this table includes years prior to 1940, which was established as the base year for this section of the Economic Profile.

> State and local government programs, plans, zoning, and regulations applicable to the area in which the lands to be classified are located, to the extent such State and local programs, plans, zoning, and regulations are not inconsistent with Federal programs, policies and uses, and will not lead to inequities among private individuals." 10/

More than $6 million has been disbursed or approved for local and county planning assistance within the State between 1961 and June 30, 1967. 11/

5. California's Twenty Year Water Resources Development Program 1966-1985 - Development of Water resources within the State by the Bureau of Reclamation, Corps of Army Engineers, Soil Conservation Service, and State Department of Water Resources will approximate $29 billion over the twenty year period 1966-1985. Approximately 200 projects have been identified for construction over this period. 12/ Where public lands are involved, BLM advises the construction agency of the effects the proposed project would have on BLM resource programs and the effects that BLM resource programs may have on the proposed water project. The water development program makes provision for fish and wildlife, flood control, harbors, irrigation, municipal and industrial uses, navigation, power generation, recreation and water conservation. Proper management, utilization and treatment of BLM watershed lands in the future is essential to the success of this program.

Figure 4 shows the major water resources envisioned by the 20 year development plan. Figure 5 shows where inadequacies and surpluses exist in the State and the proposed water transfer plan.

6. Salt Water Conversion - In addition to the programs of conservation, protection and development of conventional water resources, California is working with the Federal government in a saline water conversion plan. The Department of the Interior and the State jointly financed the development of a saline water conversion plant in San Diego capable of producing one million gallons each day. The plant operated for two years before being dismantled and shipped to Cuba in 1964 to serve the Guantanamo Naval Base. This facility is now being replaced by the Department of the Interior and the California Water Resources Board. California and other agencies of the Federal government are cooperating in research and development of a multimillion-gallon saline water conversion plant. California's water problems are unique and formidable; yet they are being met.

WATER TRANSFER PLAN

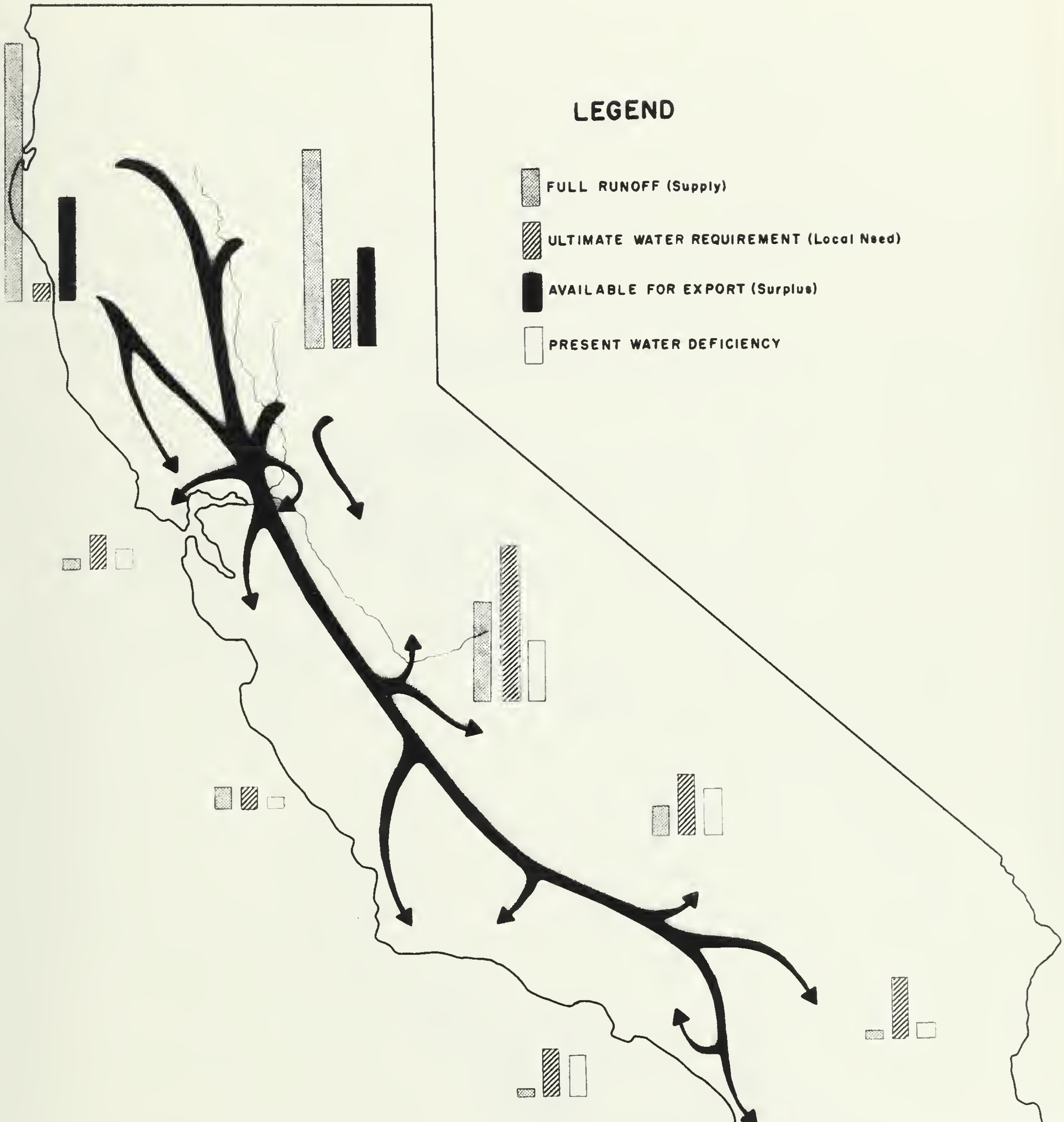

LEGEND
FULL RUNOFF (Supply)
ULTIMATE WATER REQUIREMENT (Local Need)
AVAILABLE FOR EXPORT (Surplus)
PRESENT WATER DEFICIENCY

FIGURE 4

WATER RESOURCE DEVELOPMENT

STATE-FEDERAL PROGRAM FOR 1966-1985

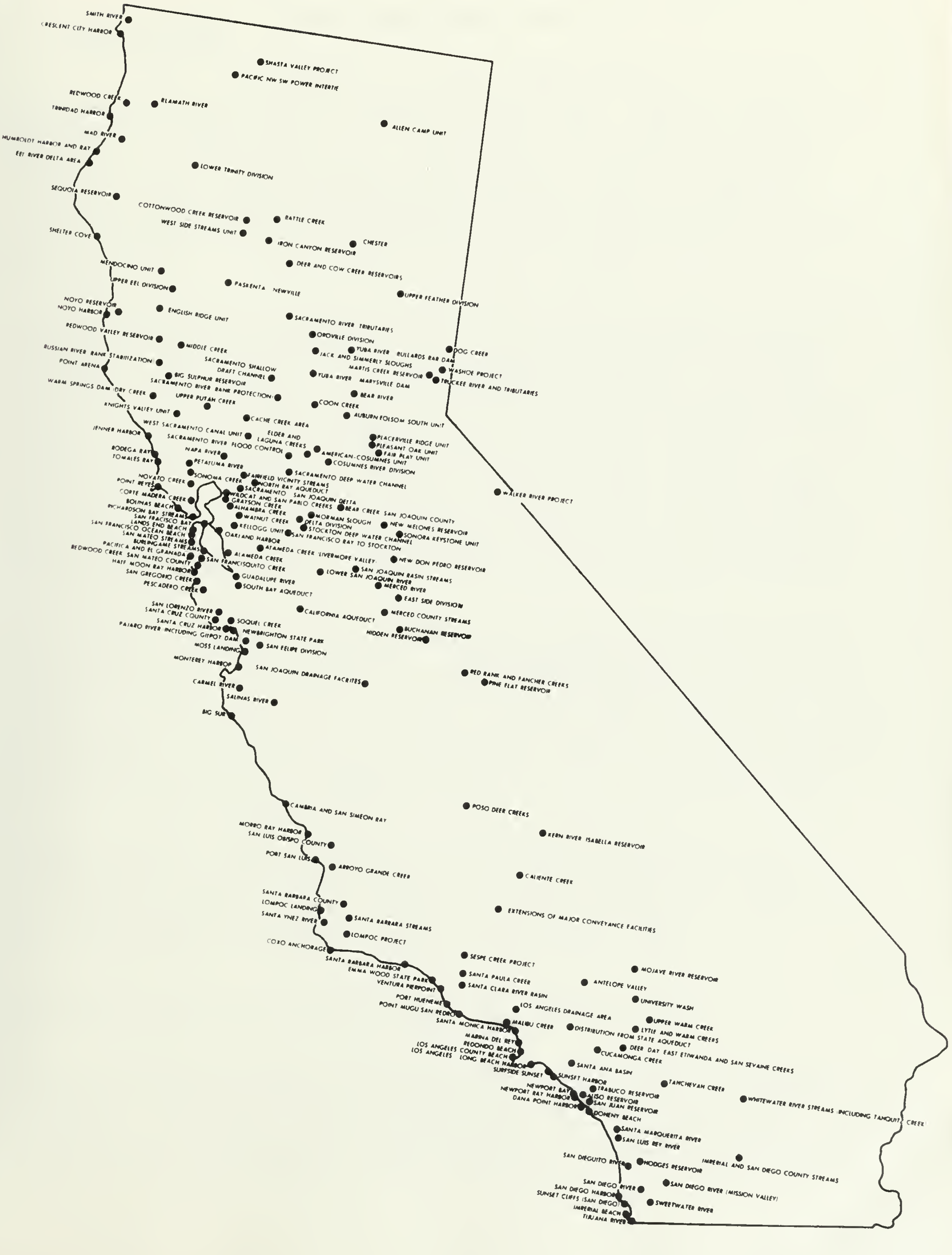


FIGURE 5

D. Lands - Past, Present and Future Demand for Public Domain Transactions

The public lands administered by BLM contribute directly and indirectly to the economy of California. Lands transferred into private ownership are placed on the tax rolls, thereby increasing county revenues. In counties where Federal ownership is large, local people are inclined to favor transfers into private ownership. The State and counties receive an annual share of receipts collected by BLM. From 1803 to 1966, California has received more than $82 million as shown in Table 8.

Although it is difficult to place actual dollar figures on indirect effects, consideration must be given to the transfers. Benefits must be measured in some way to reflect the public interest. By example, a water development project may take land out of mineral and timber production, but may bring other lands into agricultural production and provide recreation, flood control, etc. A defense installation may provide employment to hundreds of families while using thousands of acres of public land for a single purpose, thus eliminating all other uses. Every decision involving public domain lands, whether for multiple use management, single use, or transfer into private ownership, either directly or indirectly effects the economy of the State.

California's pattern of land ownership has evolved from various transactions among Federal, State, other public and private owners. By fiscal year 1966 approximately 56 million acres of the State's 100 million acres had been disposed of in grants to the State and railroad, and sales and grants to individuals. Reservations for national forests, parks, defense and Indian purposes of another 28 million acres reduced the public domain managed by BLM to about 16 million acres. 13/

Grants to railroads totalled 11,588,700 acres during the period 1850 to 1965. Grants to the State, including school indemnity, swamp and other grants for the same period amounted to 8,852,140 acres. Under the Recreation and Public Purposes Act, the State, counties, cities, and school districts in California have acquired about 25,000 acres. 14/

Practically all agricultural land has passed into private ownership under the various agricultural land laws.

Since 1940 major lands jurisdiction transfers exceeding two million acres have been to military agencies and the Bureau of Reclamation. About 816,500 acres have been withdrawn as National Cooperative Lands and Wildlife areas. Thousands of acres have also been set aside for future powersite development.

Total acres withdrawn yearly for all purposes dropped from 715,000 acres in 1962 to 13,000 acres in 1966.

Patents issued under the Small Tract Act reached a peak in 1960, when 5,095 patents were issued. In 1966, there were only 195. Transfers under the act in future years are expected to be minimal.

Total BLM transfers, other than exchanges, made in 1962 approximate 20,663 acres compared with 7,559 acres in 1966. To date, there have been no transfers under the Public Land Sale Act of 1964.

While transfers to private ownership are at a low peak, use of the public lands for other purposes is increasing. Through cooperative efforts of local, State and Federal agencies in multiple use classification and planning, numerous programs requiring use of public lands have been identified. Private, non-profit, and local agencies will be looking for BLM administered lands to satisfy needs for school sites, dumpsites, airports, open space, and other needs.

Thousands of acres will also be required if existing and anticipated needs of the State of California are to be met. Unsurveyed school land amounts to about 75,000 acres and there remains 15,000 acres of unsatisfied indemnity selections to be made by the State. An exchange of lands in King Range for a national redwood park, now being considered by Congress, would involve an estimated 31,000 acres. Twenty-five potential State park sites totalling 270,000 acres have been identified in a recent joint study by BLM, Bureau of Outdoor Recreation and the State Department of Parks and Recreation. 15/ The State Department of Fish and Game has also asked BLM to consider exchanges with the State Lands Commission to block up ownership in some of the cooperative land and wildlife areas.

As the State Water Plan develops, land will be needed for project purposes, water based recreation and wildlife mitigation. The projects are not expected to bring much, if any, public land into agricultural production because costs of water delivery to any public lands having agricultural potential will be too high. 16/

Federal land use adjustment programs, such as exchanges for BLM, National Park Service, Forest Service boundary adjustments, and implementation of the Colorado Land Use Plan are expected to have a considerable impact on lands now administered by BLM. In consideration of projected population growth, demands for public land use can be expected to increase. Classification and multiple use administration problems will undoubtedly become more complex because of increased competition between conservation groups for multiple use management and needs for private, State and local governments.

E. The Geographic Pattern of Urbanization and Economic Development.

California absorbs its growing population and industry under a low density pattern of land usage. Most Californians prefer to live in single family dwellings. Most commute by automobile. As a consequence, the State's urban complexes expand geographically, absorbing up to 175 acres of open space each day. The freeway system, moreover, is a determining factor as far as the specific pattern of urbanization is concerned.

The historical defense orientation of the California economy in a large degree accounts for the fact that 60 percent of the 12 million population increase between 1940 and 1965 occurred in seven southern California counties. (See Table 9). In more recent years, Santa Clara and Sacramento Counties have felt the impact of defense and aerospace expenditures.

Six southern California counties - Los Angeles, Orange, San Diego, San Bernardino, Riverside and Ventura - account for over 56 percent of the State's population. As of 1965, San Francisco, San Mateo, Alameda, Contra Costa and Marin Counties had a total population of slightly over 3 million persons. This represented 16.1 percent of the total population of the State. Over 86 percent of California's population is concentrated in ten major urban centers as shown in Figure 6. It is unlikely that this pattern of urbanization will be reversed.

Figure 7 shows the magnitude of California's ever increasing population. Southern California has the bulk of the State's population. This is further illustrated by Figure 8 which shows population distribution in 1960.

F. The State's Economy in Depth

1. Population - Rapid population growth has been one of the main factors supporting California's economic growth and development over the past several decades. From a level of 1.5 million in 1900, the State's population passed the 7.0 million mark in 1940 and increased to 10.5 million persons by 1950. Between 1950 and 1960, population increased by 5.0 million persons. Between 1960 and 1965, the annual population increase averaged 581,000 persons. At least 60.0 percent of California's population growth is accounted for by immigration from other states. As of 1966, the population of the State is in excess of 19.0 million. 17/

Stated another way, in each 24-hour period of the decade from 1950 to 1960, California's population increased an average of 1,400 persons each day. Since 1960, the daily population increment has continued to average 1,400 persons. There is reasonable certainty that this population growth rate will be maintained,

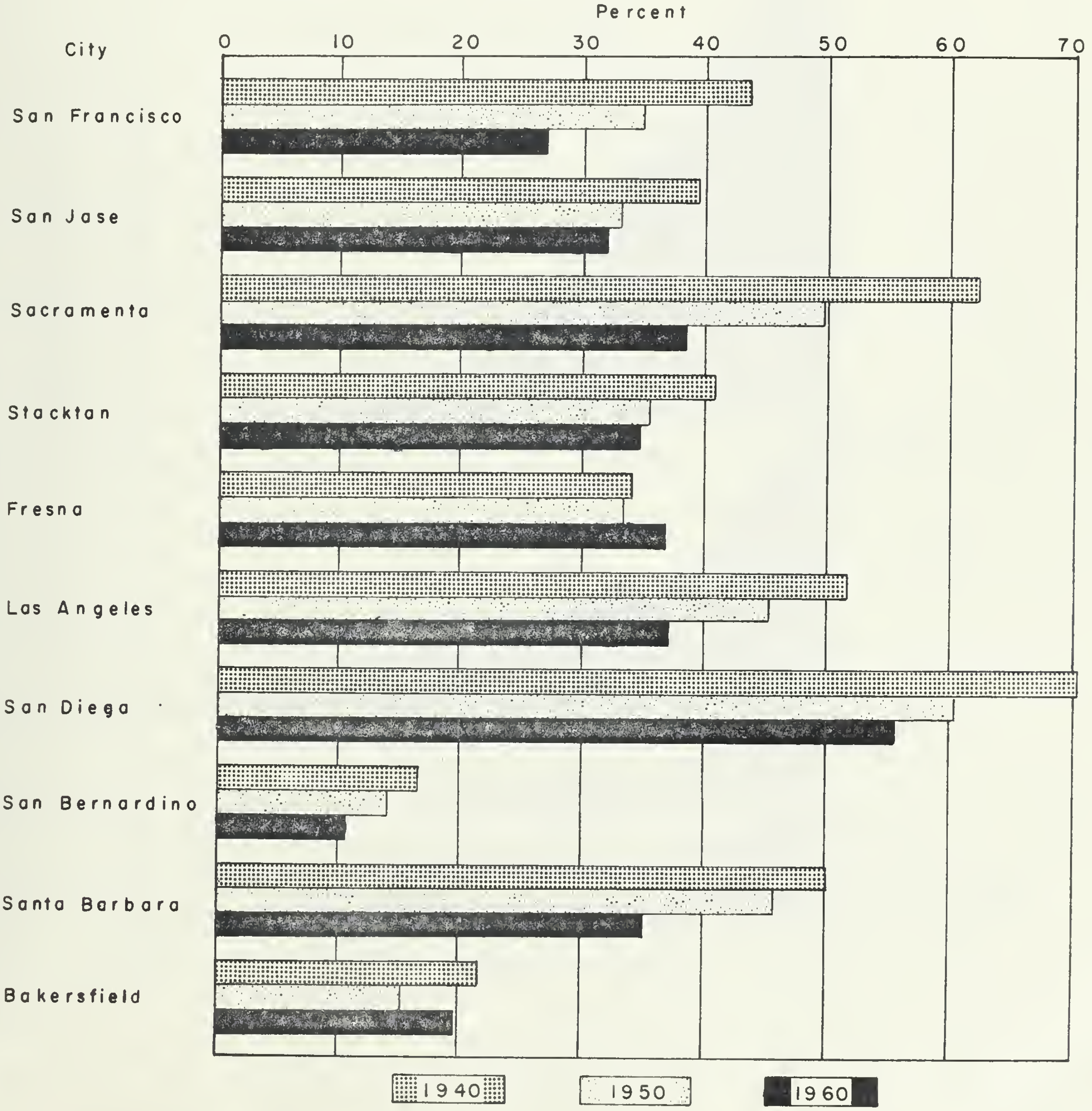
TABLE 9

POPULATION GROWTH IN SELECTED CALIFORNIA COUNTIES: 1940-1965

Northern California	Population Increase
Marin	+ 130,000
San Francisco	+ 150,000
San Mateo	+ 412,000
Santa Clara	+ 682,000
Alameda	+ 500,000
Contra Costa	+ 400,000
Solano	+ 110,000
TOTAL	2,384,000

Southern California	
Los Angeles	+ 4,000,000
Orange	+ 1,000,000
San Diego	+ 1,000,000
Ventura	+ 200,000
Santa Barbara	+ 200,000
Riverside	+ 300,000
San Bernardino	+ 500,000
TOTAL	7,200,000

CALIFORNIA'S CITIES



POPULATION OF THE LARGEST CITY IN A STANDARD METROPOLITAN STATISTICAL AREA, AS A PERCENT OF THE TOTAL SMSA POPULATION

FIGURE 6

MAGNITUDE OF REGIONAL GROWTH
CALIFORNIA, 1870-1960

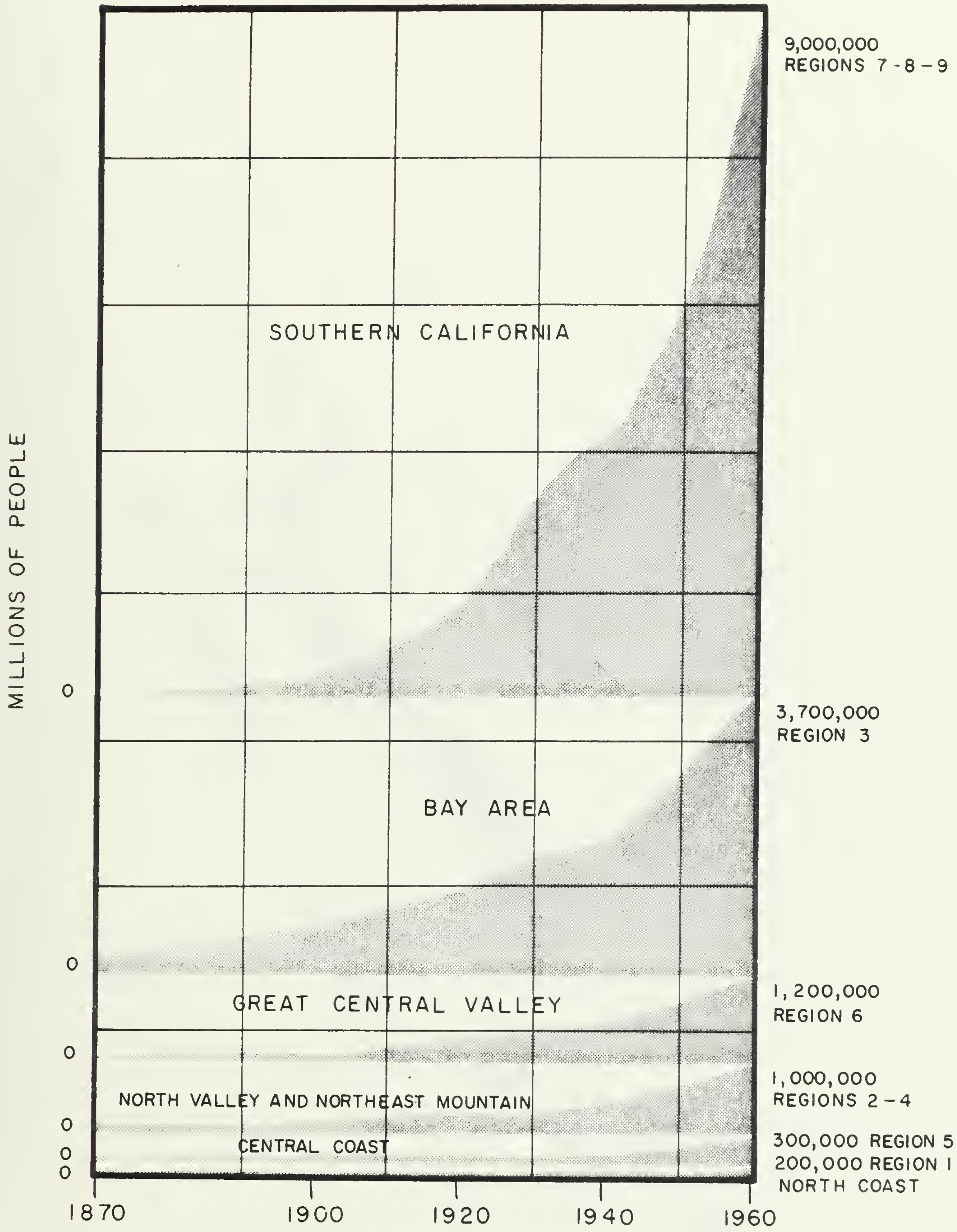


FIGURE 7

Population Distribution - 1960

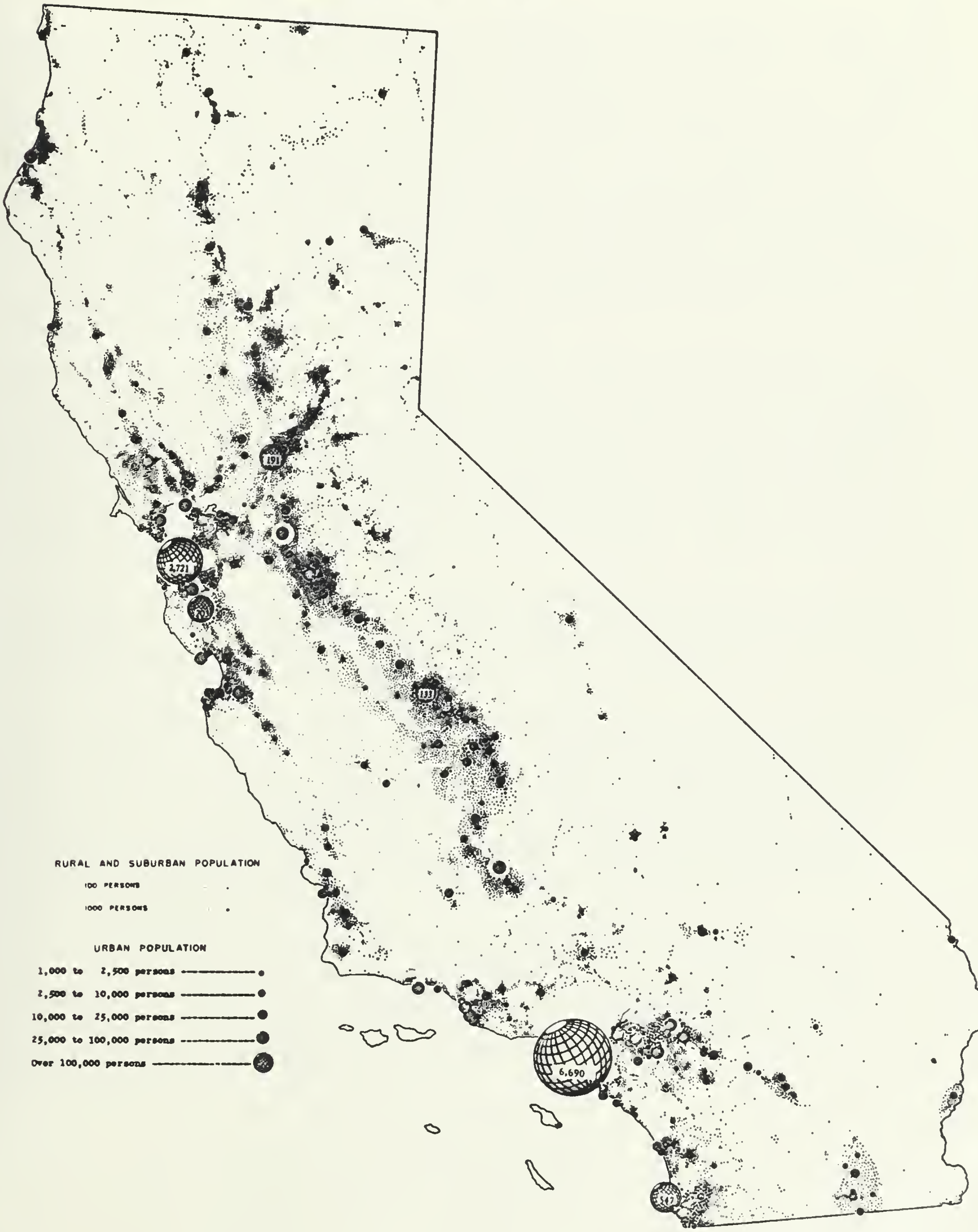


FIGURE 8

if not exceeded, in future decades. State Department of Finance projections indicate that California's population will increase to nearly 22.0 million by 1970 and over 28.0 million by 1980.

Table 4 illustrated the State's population compared to the other western states by decades with projections to 1970 and 1980. However, California's ever changing population is best illustrated in Table 10, which shows the net changes over the 15 year period 1950 to 1965. The net change during this period was an increase of 7,979 thousand persons. Figure 9 further illustrates the ever changing population pattern. In San Bernardino andRiverside Counties where BLM administers most of the lands, the population increased by more than 22 percent. In Modoc and Lassen Counties where BLM has its other large land holdings, the net change was under 6 percent. Population of California Counties is shown in Table 11. The estimated population in 1980 will exceed 28 million.

California's population ranks favorably with the Nation in terms of educational status. Of those 25 years old and older, the median school years completed in 1960 was 12.1 years; this compares with the median figure of 10.6 years for the Nation. Over 51.0 percent of California's population, age 25 and over, has at least four years of high school. Nearly 10.0 percent of this segment of the population has at least four years of college. (See Table 12) 18/

In terms of age distribution, California has a relatively young population. The median age of the population declined from 32.1 years in 1950 to 28.4 years in 1965. A median age of 28.0 years has been projected for 1980.

It is interesting to note that nearly one-half of the 5,131,000 population increase between 1950 and 1960 occurred in the age groups under 18 years. The trend toward a younger population is supported by the high birth rate and the attractiveness of California to young workers in the 20 to 40 age bracket, who are still in their child-bearing years. A young population will create heavy demands for open space and regional recreation in the decades ahead.

Contrary to general impressions, California is not populated disproportionately by retired persons over 65 years of age. (Table 13). In 1960, 9.23 percent of the population of the United States was over 65 years of age. 8.76 percent of California's population in that year was in the over 65 age group. (Table 14) 19/

TABLE 10

COMPONENTS OF CHANGE IN CALIFORNIA'S CIVILIAN POPULATION, 1950-65

Year (July 1)	Civilian Population	Net Change	Net Migration	Natural Increase	Gains from Military
1950	10,472,000	311,000	155,000	146,000	+10,000
1951	10,754,000	282,000	268,000	149,000	-135,000
1952	11,194,000	440,000	284,000	163,000	-7,000
1953	11,681,000	487,000	307,000	181,000	-1,000
1954	12,177,000	496,000	289,000	195,000	+12,000
1955	12,668,000	491,000	272,000	193,000	+25,000
1956	13,247,000	579,000	364,000	208,000	+7,000
1957	13,848,000	601,000	388,000	221,000	-8,000
1958	14,410,000	562,000	325,000	226,000	+11,000
1959	14,964,000	554,000	329,000	224,000	+1,000
1960	15,567,000	603,000	368,000	231,000	+4,000
1961	16,163,000	596,000	346,000	244,000	+6,000
1962	16,737,000	574,000	353,000	241,000	-20,000
1963	17,349,000	612,000	369,000	234,000	+9,000
1964	17,902,000	553,000	352,000	230,000	-29,000
1965	18,451,000	549,000	340,000	218,000	-9,000

Source California Department of Finance

PERCENT CHANGE IN TOTAL POPULATION OF COUNTIES

APRIL 1, 1960 AND JULY 1, 1964

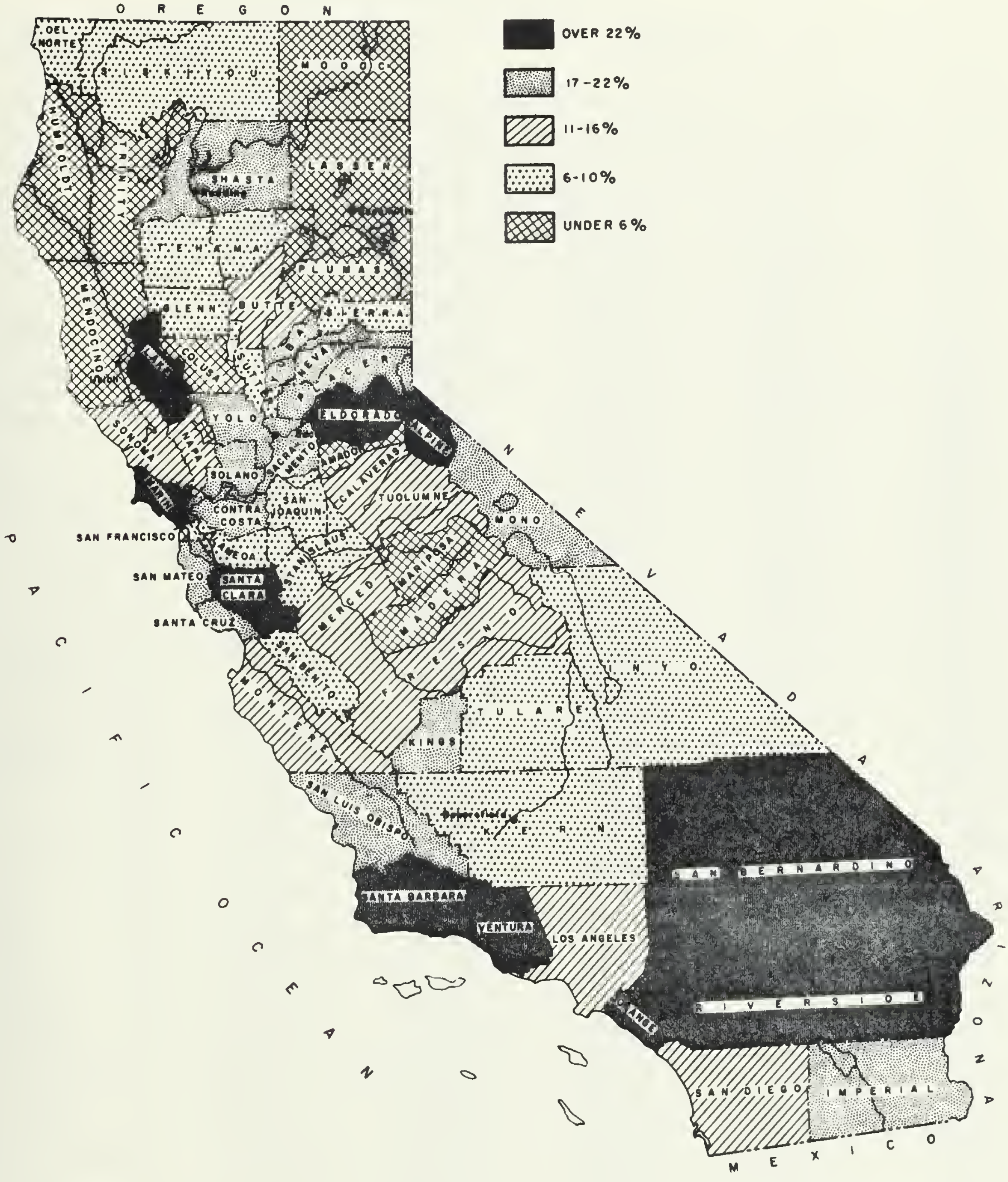


FIGURE 9

TABLE 11

TOTAL POPULATION OF CALIFORNIA COUNTIES, 1960 WITH PRELIMINARY PROJECTIONS TO 1980

Area and County	Estimated	Projected			
	July 1, 1960	July 1, 1965	July 1, 1970	July 1, 1975	July 1, 1980
THE STATE	15,863,000	18,835,000	21,734,000	24,830,000	28,137,000
Alameda	912,600	1,010,400	1,120,100	1,237,600	1,363,400
Alpine	400	500	500	500	500
Amador	10,000	11,300	12,300	13,400	14,500
Butte	83,200	104,200	117,000	128,100	139,000
Calaveras	10,400	11,700	12,300	12,900	13,600
Colusa	12,200	12,800	13,500	14,300	15,100
ContraCosta	413,200	510,200	617,700	736,300	864,800
Del Norte	17,800	18,900	20,100	21,300	22,600
El Dorado	29,900	42,500	55,700	69,900	85,000
Fresno	368,500	422,500	480,900	544,500	613,500
Glenn	17,400	20,000	21,000	22,100	23,200
Humboldt	104,900	113,400	121,900	130,800	140,300
Imperial	73,000	81,100	86,700	94,200	103,000
Inyo	11,700	11,700	11,900	12,100	12,400
Kern	294,900	326,700	366,200	409,400	456,900
Kings	50,500	68,600	78,700	86,800	95,700
Lake	13,900	16,100	17,500	19,000	20,500
Lassen	13,600	13,900	14,200	14,600	14,900
Los Angeles	6,071,900	6,869,000	7,630,800	8,430,800	9,241,500
Madera	40,700	42,800	45,500	48,400	51,500
Marin	148,800	196,100	246,800	302,100	365,100
Mariposa	5,100	5,000	5,100	5,200	5,300
Mendocino	51,000	50,300	53,000	55,900	59,000
Merced	90,900	100,600	111,600	116,200	123,600
Modoc	8,300	7,900	7,700	7,600	7,500
Mono	2,500	2,700	2,800	2,900	3,000
Monterey	195,300	230,900	276,800	331,000	396,600
Napa	66,400	77,000	88,200	100,900	115,600
Nevada	21,200	23,700	25,100	26,600	28,200
Orange	719,500	1,113,200	1,473,800	1,815,700	2,144,400
Placer	57,500	73,400	90,300	110,600	134,200
Plumas	11,600	11,700	12,300	12,900	13,500
Riverside	311,700	410,900	506,200	610,000	722,000
Sacramento	510,300	644,900	773,200	915,500	1,073,000
San Benito	15,500	16,700	18,000	19,600	21,400
San Bernardino	509,000	613,600	722,700	841,000	969,400
San Diego	1,049,000	1,252,700	1,407,700	1,593,000	1,800,100
San Francisco	741,500	745,900	748,600	750,500	752,800
San Joaquin	251,700	279,700	310,400	343,400	379,400
San Luis Obispo	81,900	105,100	127,900	152,400	178,600
San Mateo	449,100	553,600	652,200	756,500	866,800
Santa Barbara	173,600	264,400	334,800	410,300	491,300
Santa Clara	658,700	906,100	1,154,300	1,421,100	1,708,000
Santa Cruz	85,100	104,600	124,500	144,800	165,600
Shasta	60,400	76,900	92,600	109,400	127,400
Sierra	2,200	2,100	2,100	2,100	2,100

TABLE 11

TOTAL POPULATION OF CALIFORNIACOUNTIES, 1960 WITH PRELIMINARY PROJECTIONS TO 1980

Area and County	Estimated	Projected			
	July 1, 1960	July 1, 1965	July 1, 1970	July 1, 1975	July 1, 1980
Siskiyou	33,000	35,100	36,900	38,800	40,800
Solano	137,100	159,500	186,400	217,800	254,200
Sonoma	148,800	177,600	214,500	259,500	318,700
Stanislaus	158,300	175,700	195,000	216,100	239,200
Sutter	33,700	38,500	42,600	47,000	51,700
Tehama	25,500	30,100	34,400	39,100	44,100
Trinity	9,600	9,600	9,600	9,700	9,700
Tulare	169,400	182,700	198,700	216,800	237,000
Tuolumne	14,500	16,000	17,200	18,400	19,600
Ventura	203,100	297,800	419,500	562,300	738,600
Yolo	66,400	87,800	111,400	137,100	165,100
Yuba	35,100	46,600	54,600	63,200	72,500

TABLE 12

SELECTED EDUCATIONAL STATISTICS, 1960 U.S. CENSUS OF POPULATION: BY COUNTIES

County	Persons 25 years old and older				Children in elementary school	Persons 14 to 17 years old	Percent employed persons classified as professional, technical and kindred workers
	Median school years completed	Percent with less than five years of school	Percent with at least four years of high school	Percent with at least four years of college	Percent in private school	Percent in school	
United States	10.6	8.4	41.1	7.7	14.4	87.4	11.2
California	12.1	5.7	51.5	9.8	10.7	89.7	13.7
Alameda	12.1	5.7	51.7	11.2	9.9	89.8	14.3
Alpine	8.6	26.9	32.9	5.6	[a]	[a]	17.0
Amador	11.4	5.8	45.9	7.4	.2	91.7	13.7
Butte	11.4	4.5	45.3	8.3	5.9	92.9	11.5
Calaveras	10.6	5.7	39.8	5.8	11.5	95.9	10.1
Colusa	11.7	7.2	47.5	7.5	12.1	95.1	7.7
Contra Costa	12.2	4.8	55.3	12.7	5.4	94.0	15.4
Del Norte	10.7	4.1	38.6	4.4	7.2	90.3	7.7
El Dorado	11.8	3.1	48.1	6.5	1.2	92.9	10.3
Fresno	10.5	12.2	40.8	7.2	4.3	87.7	9.8
Glenn	11.3	6.5	44.7	5.8	1.3	92.8	8.1
Humboldt	11.0	4.7	42.1	6.2	5.4	90.3	9.2
Imperial	9.0	23.3	33.8	5.4	6.4	86.8	6.8
Inyo	12.1	4.4	52.5	8.5	1.1	97.0	13.0
Kern	10.9	9.0	42.0	7.2	5.6	89.4	11.5
Kings	9.5	14.9	33.8	5.4	6.6	90.1	8.9
Lake	10.6	5.3	40.1	6.4	1.5	88.6	11.0
Lassen	11.0	5.1	42.4	5.6	.3	92.5	10.4
Los Angeles	12.1	4.7	53.1	9.8	13.9	90.3	14.1
Madera	9.0	14.6	32.6	5.3	4.0	86.3	8.8
Marin	12.6	2.3	67.1	19.0	14.0	95.0	19.2
Mariposa	11.7	4.4	48.1	8.7	2.4	85.0	15.1
Mendocino	10.8	6.9	41.4	5.5	7.2	87.9	11.6
Merced	10.2	12.5	39.2	5.6	8.3	87.8	8.5
Modoc	12.0	3.8	50.5	6.9	.3	91.0	8.4
Mono	12.4	1.4	62.1	10.4	1.5	[a]	10.8
Monterey	11.9	8.2	49.4	10.1	7.1	74.6	11.3
Napa	11.2	5.6	41.6	7.0	11.6	90.3	14.4
Nevada	11.5	3.9	46.2	6.6	5.0	95.5	13.3
Orange	12.2	3.2	57.7	10.6	8.8	90.4	14.7
Placer	11.1	7.1	43.6	6.2	2.4	94.1	12.1
Plumas	11.3	4.3	44.6	7.0	[a]	93.6	9.7
Riverside	11.9	7.1	49.4	8.7	8.8	91.3	12.0
Sacramento	12.2	4.8	55.8	10.1	9.7	93.1	14.7
San Benito	9.4	15.2	34.4	6.1	17.7	91.3	7.6
San Bernardino	11.8	5.5	48.4	7.3	9.0	91.4	12.3
San Diego	12.1	3.3	54.6	10.0	8.9	81.8	14.9
San Francisco	12.0	7.4	51.0	11.1	25.1	90.3	12.2
San Joaquin	10.0	12.8	36.9	5.6	8.3	85.6	9.8
San Luis Obispo	11.4	4.8	46.0	7.5	6.3	90.8	12.7
San Mateo	12.4	3.2	61.9	14.2	13.8	95.0	15.4
Santa Barbara	12.2	6.1	55.9	12.3	11.4	89.0	15.0
Santa Clara	12.2	6.2	56.2	14.7	7.1	91.6	18.6
Santa Cruz	11.0	6.9	43.1	7.4	7.2	90.2	10.9
Shasta	11.6	3.9	46.8	6.5	3.4	92.9	10.9
Sierra	11.6	2.8	46.8	5.9	1.2	[a]	9.4
Siskiyou	11.2	5.8	44.3	6.1	[a]	94.8	9.9
Solano	11.9	4.7	49.1	6.5	5.2	92.1	11.2
Sonoma	11.1	7.4	43.9	6.8	8.6	88.4	12.1
Stanislaus	10.0	9.2	36.5	5.8	4.0	88.5	10.0
Sutter	11.2	6.9	44.7	7.2	6.0	91.5	10.7
Tehama	11.5	3.8	46.3	6.6	2.5	94.2	9.7
Trinity	11.0	3.8	40.9	6.0	.3	90.2	12.8
Tulare	9.4	14.0	33.1	5.2	3.9	85.3	9.1
Tuolumne	11.5	3.7	46.2	6.0	.5	96.0	10.8
Ventura	11.6	8.4	47.0	8.2	9.5	89.0	13.9
Yolo	11.5	7.8	47.0	10.9	7.6	91.3	13.2
Yuba	10.8	6.5	40.6	4.6	7.8	87.2	9.2

---

[a] Percent not shown where less than 0.1 or where base is less than 200.

Department of Education
Bureau of Education Research

TABLE 13

PERCENTAGE AGE DISTRIBUTION OF CALIFORNIA'S POPULATION
1960

Age Group	% of Population
0- 4	10.3
5- 9	10.4
10-14	9.7
15-19	8.5
20-24	6.2
25-29	6.2
30-34	6.4
35-39	6.7
40-44	7.0
45-49	6.2
50-54	5.5
55-59	4.5
60-64	3.8
65 and over	8.7

Source: U.S. Census

TABLE 14

1960 Age Groups Compared

Age Group	Los Angeles County	California	United States
0 - 19	2,139,611	5,859,717	69,005,416
% of Total	35.44	37.28	38.48
20 - 34	1,190,408	3,113,880	33,619,071
% of Total	19.71	19.81	18.75
35 - 64	2,155,514	5,367,403	60,139,108
% of Total	35.69	34.15	33.54
65 +	553,238	1,376,204	16,559,580
% of Total	9.16	8.76	9.23
TOTAL	6,038,771	15,717,204	179,323,175
Percent	100.00	100.00	100.00

Source: 1960 Census Reports

Recent demographic studies by the State Department of Finance reveal that the greatest percentage increase in California's population between 1965 and 1980 will occur in the 18 to 24 age group. Interestingly enough, the 25 to 44 age group will also increase at a relatively rapid rate during this period as shown on Table 15

Table 15

Age Distribution of California'a Population 1965, 1980, 2000 17/

	1965		1980			2000		
Age	Population (000's)	% Male	Population (000's)	% Increase since 1965	% Male	Population (000's)	% Increase since 1965	% Male
Total	18,756	49.7	28,025	49.4	49.5	41,939	123.6	49.3
0								
0 - 4	1,914	50.9	2,800	46.3	51.1	3,710	93.8	51.1
5 -17	4,685	50.8	6,297	34.4	51.0	8,991	91.9	51.0
18 -24	1,967	51.3	3,442	75.0	51.4	4,739	140.9	51.4
25 -44	4,896	50.2	7,897	61.3	50.3	12,476	154.8	50.1
45 -64	3,693	49.0	5,120	38.6	48.2	8,336	125.7	48.3
65 +	1,601	42.7	2,469	54.2	40.9	3,687	130.3	39.6

Previous studies, however, indicate that the 6-17 and 18-24 age groups will increase relatively as a proportion of total population as shown in Figure 10.

Despite periodic cyclical adjustments in the national economy, California's level of employment, personal income and value of goods produced has grown almost without interruption over the past quarter of a century. With the exception of minor declines in the post-war transition of 1944-1945 and the first post-war recession in 1948-1949, the level of civilian employment has increased every year since 1940. The levels of personal income and value of production have increased every year since 1938. These indices measure the basic strength of the underlying growth forces that will move the California economy ahead to greater advances in the next several decades.

2. Income Profile - In 1929, personal income in California reached an historical high of $5.5 billion. During the depression decade, income declined to $3.2 billion in 1933. By 1940, personal income had recovered to a level of $5.8 billion. The post-war period brought a dramatic expansion in income to $19.6 billion in 1950 and $43.2 billion in 1960. (See Table 16). Total personal income will approach $65.0 billion in 1966; by 1975, personal income in the State will exceed $100 billion.

CHANGES IN AGE GROUPS
1958 and 1980

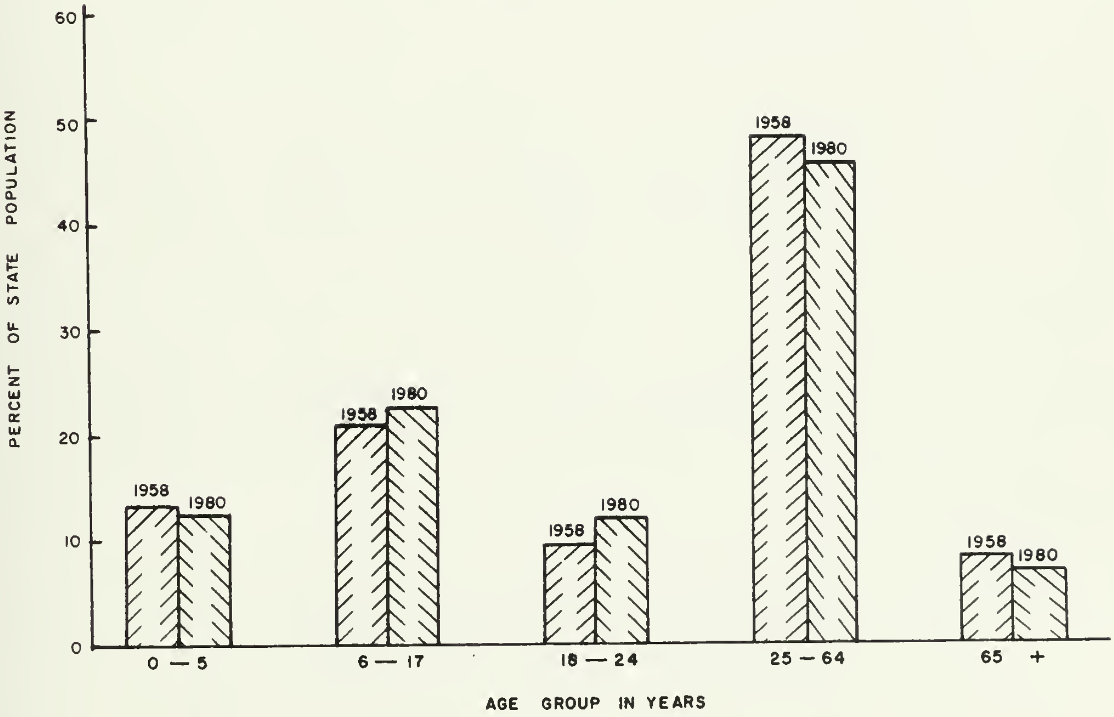


FIGURE 10

TABLE 16

PERSONAL INCOME IN CALIFORNIA, TOTAL AND PER CAPITA, 1950-65

Year and Quarter	Total (In Millions)	Percent Change	Percent of U.S.[a]	Per Capita Amount	Percent Change	Percent of U.S. Average[a]
1950.............	$19,627	10.0	8.62	$1,838	7.1	122.94
1951.............	22,726	15.8	8.89	2,041	11.0	123.70
1952.............	25,089	10.4	9.21	2,156	5.6	124.70
1953.............	26,642	6.2	9.25	2,175	0.9	120.90
1954.............	27,432	3.0	9.45	2,152	1.1	120.90
1955.............	30,224	10.2	9.72	2,301	6.9	122.78
1956.............	33,273	10.1	9.99	2,426	5.4	122.97
1957.............	35,582	6.9	10.13	2,495	2.8	122.24
1958.............	37,241	4.7	10.31	2,503	0.3	121.21
1959.............	40,960	10.0	10.68	2,648	5.8	122.76
1960.............	43 183	5.4	10.77	2,722	2.8	122.67
1961.............	45,808	6.1	10.99	2,784	2.3	122.75
1962.............	49,053	7.1	11.08	2,888	3.7	121.81
1963.............	52,317	6.7	11.26	2,983	3.3	121.56
1964.............	56,122	7.3	11.34	3,103	4.0	119.81
1965[b]............	59,700	6.4	11.26	3,209	3.4	117.77

a. Based on Revised U.S. Series
b. Estimated by California Department of Finance

20/ Source: U.S. Department of Commerce, Office of Business Economics.

California's personal income of $59.7 billion in 1965 (Table 17), represented 11.3 percent of the national total. Wages and salaries amounted to $40.6 billion, accounting for 67.9 percent of the total. Disposable personal income in the State increased from $17.9 billion in 1950 to $52.7 billion in 1965.

Figure 11 shows that per capita income in California reached a level of $3,209, 18 percent above the national average. Despite the rapid rate of population growth, per capita income increased in every year from 1955 to 1965.

Disposable personal income rose to a per capita level of $2,834. in 1965, as illustrated in Table 18, 18.5 percent above the national average. The median family income level was $8,000 in 1965. 20/

3. Employment Profile - Employment expanded from 2.7 million in 1940 to 4.2 million in 1950 and 6.0 million in 1960. (See Tables 19 and 20). In May 1966, civilian employment reached a level of 7.1 million; in the twelve month period from May 1965 to May 1966, 316,000 new jobs were added to the employment base. The State's labor force is projected to grow to 8.5 million in 1970 and 10.0 million by 1975.

California presently ranks second only to New York in manufacturing, both in employment and value added. Business economists in the State proclaim that California will lead the Nation in the number one industrial position within the next two years. One of the most significant economic developments in California during the past two and one-half decades has been the accelerated expansion in the industrial base of the economy. Between 1940 and 1966, manufacturing employment expanded from 461,000 to 1,516,000. In the twelve month period subsequent to May 1965, 84,000 new manufacturing jobs were added to the employment base. Most of the increase occurred in the hard goods industries, particularly aircraft and electrical equipment.

Of the 1.5 million employed in manufacturing, nearly one-third (481,000) are in the aerospace-electrical industries, i.e., equipment, aircraft, ordnance (missiles) and instruments. Food processing is the next most important area of manufacturing; in 1965, employment averaged 167,600. Next in line of importance in 1965 were: nonelectrical machinery (99,900), fabricated metals (98,500), printing and publishing (80,400, apparel manufacturing (67,100), primary metals (53,800), stone, clay and glass products (51,200). Motor vehicle assembly plants employed 34,200 persons in 1965. Tables 21 and 22 illustrate the State's manufacturing profile. Figure 12 shows the State's manufacturing as related to the Nation. 21/

TABLE 17

PERSONAL INCOME BY MAJOR SOURCES, CALIFORNIA, 1950-65
(In millions)

Year and Quarter	Total	Wages and Salaries[a]	Other Labor Income	Proprietorship Farm	Proprietorship Other[b]	Property Income[c]	Transfer Payments[d]	Less Social Insurance Contri-butions
1950....	$19,627	$12,359	$ 279	$ 838	$2,363	$2,645	$1,429	$ 286
1951....	22,726	14,880	367	1,116	2,573	2,902	1,237	349
1952....	25,089	16,828	429	1,125	2,699	3,092	1,310	394
1953....	26,642	18,130	480	976	2,763	3,295	1,427	428
1954....	27,432	18,344	523	951	2,840	3,696	1,578	499
1955....	30,224	20,155	596	1,004	3,240	4,077	1,723	570
1956....	33,273	22,446	670	1,069	3 619	4,252	1,875	659
1957....	35,582	23,888	782	964	2,667	4,863	2,195	775
1958....	37,241	24,808	818	988	3,672	5,090	2,697	833
1959....	40,960	27,531	940	1,054	4,107	5,442	2,857	971
1960....	43,183	29,276	1,014	995	3,999	5,793	3,233	1,127
1961....	45,808	30,752	1,150	931	4,191	6,250	3,735	1,201
1962....	49,053	33,189	1,232	1,009	4,379	6,592	3,961	1,309
1963....	52,317	35,542	1,343	941	4,592	7,091	4,329	1,521
1964....	56,122	38,146	1,445	1,098	4 812	7,604	4,647	1,630
1965[e]...	59,700	40,600	1,600	1,200	5,000	8,100	5,000	1,800

---

a. Employer contributions to private pensions, pay of military reservists directors' fees, etc.
b. Income of unincorporated businesses and professions.
c. Interest, dividends rents and royalties.
d. Retirement programs, unemployment insurance, disability payments public relief, etc.
e. Estimated by California Department of Finance

20/ Source: U. S. Department of Commerce, Office of Business Economics.

TABLE 18

DISPOSABLE INCOME,[a] CALIFORNIA, 1950-65

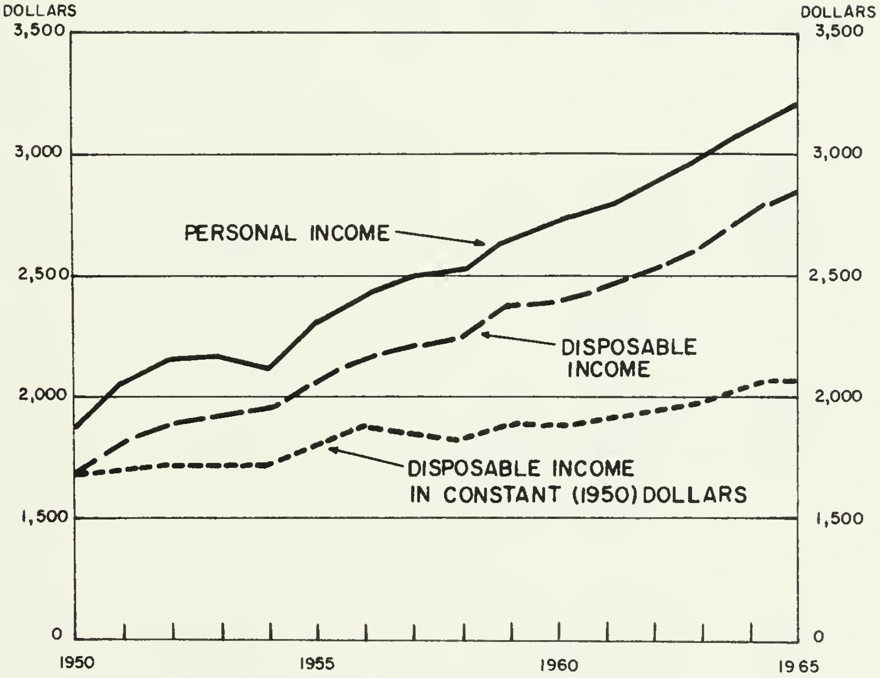
Year	Totals in millions			Disposable income per capita		
					In 1950 dollars[b]	
	Personal income	Less income taxes	Disposable income	Amount	Amount	Index
1950	$19,627	$1,761	$17,866	$1,679	$1,679	100.0
1951	22,726	2,608	20,188	1,808	1,682	100.2
1952	25,089	3,083	22,006	1,891	1,710	101.8
1953	26,642	3,384	23,258	1,922	1,704	101.5
1954	27,432	3,184	24,248	1,937	1,704	101.5
1955	30,224	3,497	26,727	2,055	1,801	107.3
1956	33,273	3,996	29,277	2,156	1,867	111.2
1957	35,582	4,256	31,326	2,210	1,840	109.6
1958	37,241	4,301	32,940	2,235	1,813	108.0
1959	40,960	4,734	36,226	2,370	1,887	112.4
1960	43,183	5,309	37,874	2,390	1,867	111.2
1961	45,808	5,517	40,291	2,455	1,906	113.5
1962	49,053	6,155	42,898	2,519	1,935	115.2
1963	52,317	6,487	45,830	2,613	1,968	117.2
1964	56,122	6,375	49,747	2,753	2,042	121.6
1965	59,700	6,975	52,725	2,834	2,064	122.9

[a] Personal income less federal and state income taxes. This is slightly different from the concept of disposable income in the national income accounts, where the tax deduction includes amounts paid under such other personal tax levies as those on inheritances, estates, gifts, personal property and driver permits.

[b] Per capitaincome in 1950 dollars has been obtained by using the implicit price deflator derived from Department of Commerce estimates of current and constant dollar per capita disposable income by state, published in the Survey of Current Business for April 1965.

Source: Personal income 1950-64 - U.S. Department of Commerce.
Personal income 1965, tax payments 1950-65 and all compilations of disposable income - California Department of Finance.

PER CAPITA INCOME, CALIFORNIA: 1950-65



Per capita income of Californians gained $105 from 1964 to 1965. Disposable income continued to expand in terms of both current and constant dollars.

FIGURE 11

TABLE 19

Civilian Employment in California

1940 - 1960 - 1965
(Thousands)

Basic Employment	1940	% of Total Employment	1960	% of Total Employment	1965	% of Total Employment
Agriculture, Forestry and Fisheries	317	11.7%	457	7.6%	361	5.2%
Mineral Extraction	46	.8	33	.6	32	0.3
Manufacturing	461	17.0	1,362	22.5	1,500	21.5
TOTAL Basic Employment	824	29.5	1,852	30.7	1,893	27.0
Nonbasic Employment						
Construction	128	4.7	362	6.0	433	6.2
Transportation, Communication, Utilities	199	7.4	375	6.2	410	5.9
Trade	659	24.4	1,295	21.4	1,480	21.2
Finance, Insurance, Real Estate	124	4.6	285	4.7	360	5.2
Services	503	18.6	1,014	16.7	1,312	18.9
Government	266	9.8	868	14.3	1,092	15.6
Total Nonbasic Employment	1,879	70.5	4,199	69.3	5,087	73.0
TOTAL EMPLOYMENT	2,703	100.0	6,051	100.0	6,980	100.0

Source: State of California, Department of Industrial Relations

TABLE 20
CIVILIAN LABOR FORCE, CALIFORNIA, 1950-65
(In thousands)

Year and month	Labor force	Employed[a]	Unemployed[b]	Percent unemployed	
1950	4,501	4,154	347	7.7	
1951	4,670	4,468	202	4.3	
1952	4,902	4,696	206	4.2	
1953	5,063	4,858	205	4.0	
1954	5,110	4,856	254	5.0	
1955	5,303	5,095	207	3.9	
1956	5,566	5,378	188	3.4	
1957	5,797	5,554	243	4.2	
1958	5,904	5,526	377	6.4	
1959	6,104	5,812	292	4.8	
1960	6,299	5,933	367	5.8	
1961	6,481	6,036	446	6.9	
1962	6,651	6,262	389	5.8	
1963	6,860	6,449	411	6.0	
1964	7,062	6,640	422	6.0	
1965	7,262	6,833	429	5.9	
				Un-adjusted	Adjusted for seasonal variation
1964: January. . .	6,892	6,423	469	6.8	5.9
February . .	6,924	6,425	499	7.2	5.9
March . . .	6,915	6,458	457	6.6	5.8
April . . .	6,932	6,538	394	5.7	5.7
May	7,034	6,634	400	5.7	5.9
June	7,165	6,716	449	6.3	5.9
July	7,118	6,699	419	5.9	6.0
August . . .	7,164	6,759	405	5.7	6.2
September. .	7,220	6,855	365	5.1	6.2
October . .	7,141	6,786	355	5.0	6.2
November . .	7,087	6,653	434	6.1	6.4
December . .	7,155	6,732	423	5.9	6.1
1965: January . .	7,085	6,565	520	7.3	6.3
February . .	7,075	6,587	488	6.9	5.7
March . . .	7,106	6,634	472	6.6	5.9
April . . .	7,120	6,682	438	6.2	6.1
May	7,215	6,805	410	5.7	5.9
June	7,353	6,897	456	6.2	5.8
July	7,299	6,853	446	6.1	6.2
August . . .	7,374	6,960	414	5.6	6.1
September .	7,395	7,044	351	4.7	5.8
October . .	7,370	7,024	346	4.7	5.9
November . .	7,343	6,949	394	5.4	5.6
December . .	7,412	7,001	411	5.5	5.7

a Includes wage and salary workers, employers, own-account workers, and unpaid family workers. Excludes workers directly involved in work stoppages who received no pay for the payroll period which includes 12th of the month.

b Excludes the potential or latent supply of workers not active in the labor market and workers directly involved in work stoppages.

Source: California Department of Industrial Relationsand California Department of Employment.

TABLE 21

MANUFACTURES: EMPLOYMENT, PAYROLL, VALUE ADDED, AND CAPITAL EXPENDITURES, BY INDUSTRY, CALIFORNIA, 1963 (Preliminary)

(Dollar amounts in thousands)

Industry	All employees		Production workers		Value added by manufacture	New capital expenditures
	Number	Payroll	Number	Wages		
All manufacturing, including administrative and auxiliary units (includes figures not shown below)	1,394,492	$9,564,610	903,547	$5,219,500	$17,157,242	$955,769
Food and kindred products	156,779	932,047	109,654	566,877	2,452.211	141,994
Textile mill products	6,950	34,243	5,678	24,213	79,184	3,216
Apparel and related products	63,281	238,469	55,081	182,972	426,337	7,135
Lumber and wood products	52,434	293,595	45,902	244,579	511,509	42,774
Furniture and fixtures	32,681	182,914	26,368	134,491	316,032	8,227
Paper and allied products	28,865	178,785	22,761	128,683	367,727	33,610
Printing and publishing	72,471	468,723	45,367	287,203	819,511	34,881
Chemical and allied products	36,499	244,781	21,482	126,761	813,948	56,139
Petroleum and coal products	18,091	135,314	12,831	88,824	496,687	60,112
Rubber and plastic products, n.e.c. . . .	29,547	171,683	22,972	117,785	337,006	23,781
Leather and leather products	5,821	25,719	4,963	18,614	39,952	677
Stone, clay and glass products	46,360	289,819	34,771	202,658	658,674	56,842
Primary metal industries	47,774	326,327	38,480	242,929	592,451	49,821
Fabricated metal products	90,241	578,104	69,085	396,903	1,059,871	56,089
Machinery, except electrical	92,644	644,650	61,548	373,592	1,078,390	51,202
Electrical machinery	186,210	1,305,030	110,507	629,671	2,162,756	102,877
Transportation equipment	204,324	1,647,651	125,861	868,209	2,742,346	158,463
Instruments and related products	23,951	157,701	16,343	97,640	266,986	13,485
Miscellaneous manufacturing (including ordnance)	157,092	1,286,873	73,844	486,728	1,935,295	54,443
Administrative and auxiliary	42,427	421,964	--	--	--	--

n.e.c. Not elsewhere classified.

Source: U. S. Department of Commerce, Bureau of the Census.

Department of Industrial Relations
Division of Labor Statistics and Research

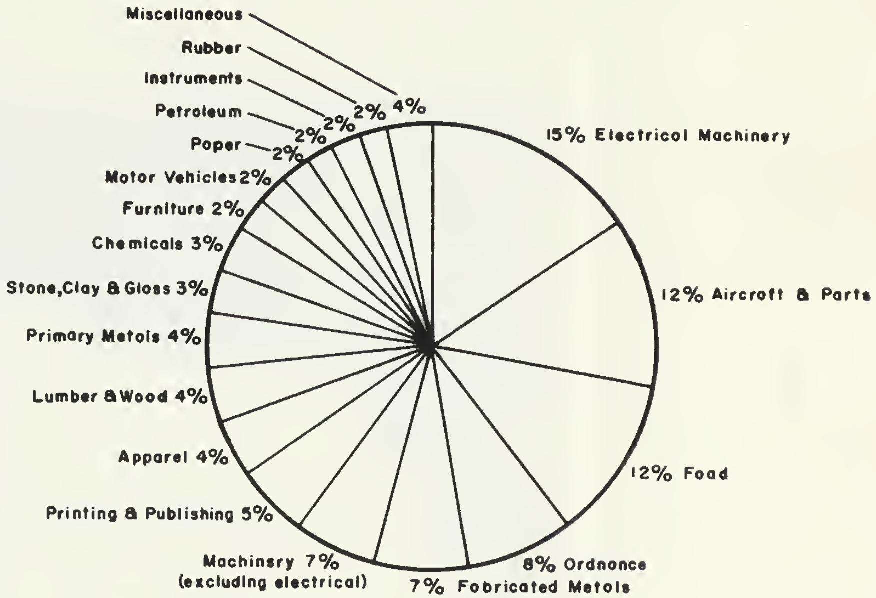
TABLE 22

California Manufacturing by Type

Industrial Classification	Number Plants		Employment			Value added by Manufacture (millions)
	All	Large*	Number	As Percent of U.S.	California Rank	
Electrical Machinery	1,540	360	215,000	13.4	3rd	$ 2,400
Aircraft and Parts	500	140	173,000	28.6	1st	1,900
Food and kindred	2,910	610	169,000	9.4	1st	2,300
Ordnance – Missiles	50	20	107,000	35.0	1st	1,300
Fabricated Metals	2,940	360	97,000	8.3	4th	1,100
Machinery †	4,000	300	93,000	6.0	6th	1,100
Printing and Publishing	3,190	240	75,000	8.0	3rd	800
Apparel	2,280	300	62,000	4.8	4th	450
Lumber and Wood	1,730	190	55,000	8.9	2nd	500
Primary Metals	700	180	51,000	4.5	7th	600
Stone, Clay and Glass	1,310	160	47,000	7.6	3rd	670
Chemicals	1,200	180	44,000	5.1	7th	900
Furniture and Fixtures	1,380	150	32,000	8.2	3rd	300
Motor Vehicles	360	70	31,000	4.4	6th	650
Paper and allied	440	140	31,000	4.8	8th	400
Petroleum	170	40	29,000	15.0	2nd	600
Instruments	550	100	28,000	7.2	2nd	300
Rubber and Plastics	660	100	27,000	6.5	3rd	300
Shipbuilding	200	30	11,000	7.9	1st	100
Textiles	230	40	7,000	0.7	17th	80
Leather	190	30	6,000	1.6	12th	50
Other Manufacturing	1,670	210	25,000	7.0	3rd	200
Total Manufacturing	28,200	3,950	1,415,000	8.2	2nd	$17,000

*With 50 or more employees †Excluding electrical

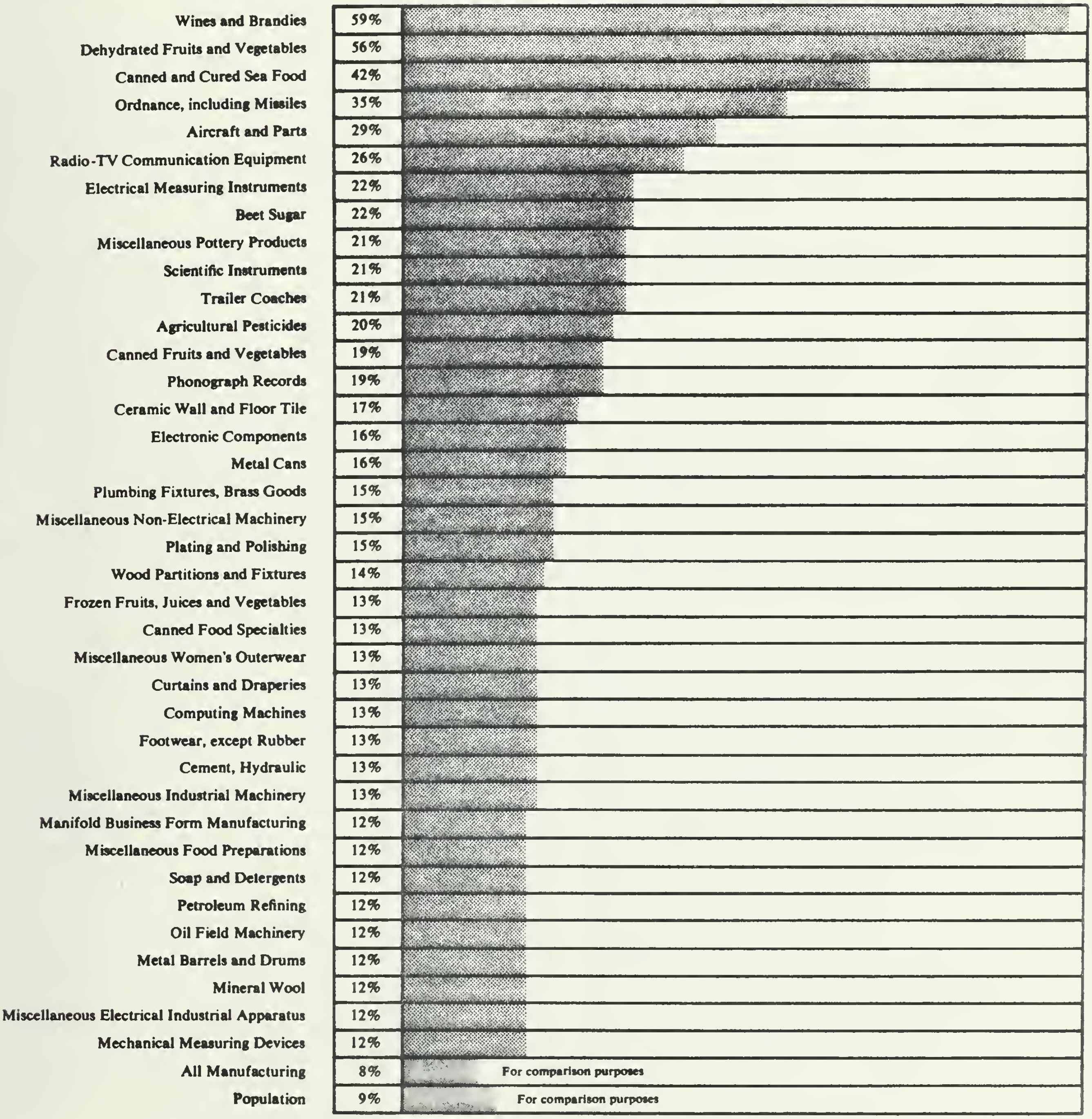
Percent Distribution of Manufacturing Employment



Sources: Number plants from 1962 County Business Patterns: Employment up-dated to 1963 on basis of California Department of Employment records. Value added projected to 1963 levels as indicated by employment and the 1962 Annual Survey of Manufacturers, U.S. Department of Commerce.

CALIFORNIA IS PROMINENT IN MANY KINDS OF MANUFACTURING

California as a percentage of the nation in manufacturing employment in some specific lines of activity



Note: This is only a *partial* list of manufacturing lines in which California is particularly strong in relation to its population.

Source: Basic data from 1962 County Business Patterns with minor adjustments where more recent employment statistics were available.

FIGURE 12

During 1963 and 1964, California lost over 30,000 jobs in the aerospace industries. The basic underlying strength of the economy is revealed by the fact that market oriented manufacturing industries grew at a sufficient pace to make up for the decline in defense employment. The diversified makeup of manufacturing in the State makes it possible to adapt to the periodic adjustments in the pace of defense spending.

Employment Profile of the 1960's - The pace of industrialization of the California economy in 1965 and 1966 was accelerated as revealed by the addition of 84,000 new jobs in the manufacturing sector in a one year period. In addition, population growth creates a demand for new jobs in non-basic lines -- trade, services, finance, government, etc. 22/

California's labor force and employment reached an all time peak in May 1966. (See Table 23). Highlights of employment changes between May 1965 and May 1966 were:

a. Growth in the total labor force - 244,000 or 3.4 percent.
b. Decline in unemployment - 72,000
c. Increase in total employment - 316,000 or 4.6 percent
d. Increase in manufacturing employment - 84,000
e. Increases in non-basic employment - Trade, 51,000; Services, 63,000; Government, 86,000; Transportation-Communication-Utilities, 16,000; Finance-Insurance-Real Estate, 15,000.
f. Employment in construction lines of activity declined by 5,000 jobs, reflecting the readjustment in residential construction.

4. Gross State Product - The Gross State Product (GSP) which measures the value of finished goods and services produced during a given year includes the market value of consumer goods, private investment goods, and government goods, produced within the State. California's Gross State Product reached an all time peak in 1965 of $75.0 billion. The expanding labor force, and increases in productivity, will make it possible to realize a $90.0 billion GSP in 1970. By 1975, it is estimated that the GSP will reach a level of at least $125.0 billion. 21/

The Gross State Product is one measure of comparison of the State's economy to that of the Nation and the other western states. The GSP is derived by multiplying total State personal income by 1.25 which approximates the relationship between gross national product and total national personal income. Total State personal income approximates 80 percent of the Gross State Product.

TABLE 23

Labor Force, Employment and Unemployment in California
May 1965 and 1966

Industry and Work Status	May 1965	May 1966	Change
Employment[a]	6,805	7,121	+316
Agric., forestry, and fisheries	349	357	+ 8
Mineral extraction	33	33	+ 1
Construction[b]	401	396	- 5
Manufacturing	1,432	1,516	+ 84
Trans., communication, utilities	398	414	+ 16
Trade	1,447	1,498	+ 51
Finance, insurance, real estate[c]	354	369	+ 15
Services	1,291	1,354	+ 63
Government[d]	1,100	1,183	+ 83
Unemployment[e]	410	338	- 72
Civilian labor force[e]	7,215	7,459	+244
Unemployment rate:			
Seasonally adjusted	5.9	4.7	-1.2
Unadjusted	5.7	4.5	-1.2

a. Includes wage and salary workers, employers, own-account workers, and unpaid family workers. Excludes workers directly involved in work stoppages who received no pay for the payroll period which includes the 12th of the month.

b. Includes construction contractors and operative builders and their employees. Excludes force-account and government construction workers.

c. Excludes operative builders and their employees.

d. Includes all civilian employees of Federal, State and local governments, regardless of the activity in which the employees are engaged.

e. Excludes the potential or latent supply of workers not active in the labor market and workers directly involved in work stoppages.

Source: State of California Department of Employment

Testimony to the consumer's confidence in the California economy is the expansion of taxable retail sales from $3.3 billion in 1940 to $12.3 billion in 1950 and $23.4 billion in 1960. Taxable sales reached a level of $31.9 billion in 1965, a gain of 5.5 percent over 1964. 22/ Figure 13 shows the economic areas within the State and illustrates the metropolitan versus non-metropolitan areas.

5. California Basic Industries - California's basic industries supporting its economy are:

Agriculture
Manufacturing
Mining
Petroleum and Gas
Fishing
Forestry and Lumber
World Trade
Recreation and Tourism
Research and Development
Management Headquarters
Motion Pictures, Radio and TV
Wholesale Trade
Government

Of these, forestry and lumber, agriculture, mining, recreation and tourism utilize products from the public lands administered by BLM. The discussion which follows is limited to industries most directly served by, or dependent on products yielded by BLM administered lands.

a. Forestry and Lumber - The State of California contains 42.5 million acres of forest land. Of this total acreage, 17.3 million acres are capable of producing commercial forest products. 6/(Tables 24 & 25) Figure 14 shows the major lumber areas in California.

About 16 percent of the total U.S. lumber production and substantial quantities of other wood products are manufactured in California. Over 1,400 timber operators are actively engaged in harvesting timber.

Timber is cut in California for many forest products, including sawlogs, peeler logs, pulpwood, fence posts, grapestakes, shingles, shakes, crossties, poles, piling, posts, mine timbers, charcoal, and fuelwood. Tables 26, 27, 28, 29, list basic production of timber and other forest products by counties in 1964.

Some of the products harvested, such as fuel wood, mine timbers

ECONOMIC AREAS

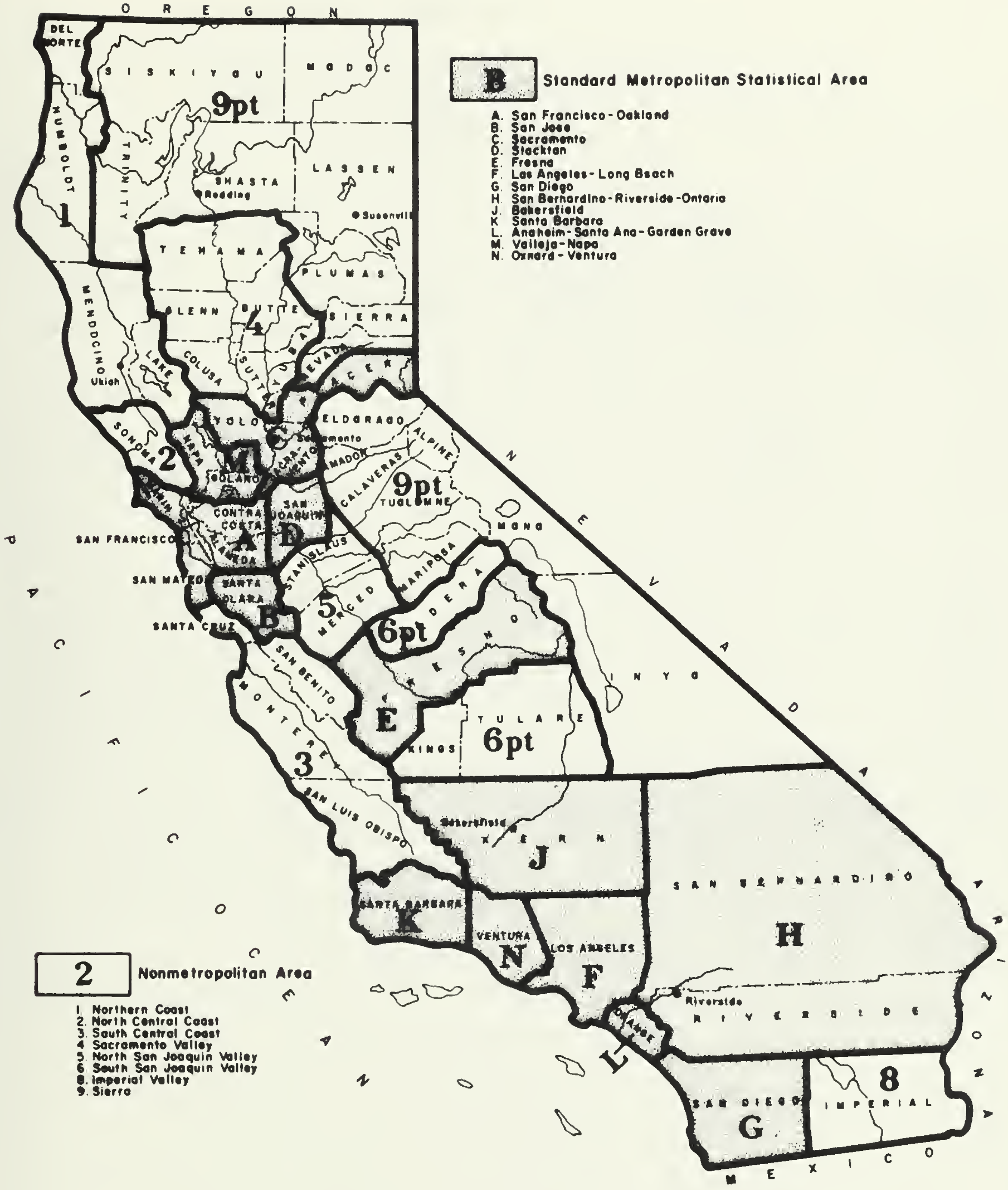


FIGURE 13

TABLE 24

Major Classes of Land by Ownership
Class of Commercial Forest
Land, California, 1960
(In thousand acres

		Forest land		
Owner	Total Acres	Total Acres	Public Acres	Private Acres
	42,541	17,317	9,264	8,053
U.S. Forest Service			8.57	
Other Federal			0.50	
State and Local			0.19	
Private:				
More than 50,000 Acres (23 owners)				3.44
5,000 to 50,000 Acres (105 owners)				1.11
Under 5,000 Acres (30,000 owners)				3.51

Source: Economic Development Prospects for Forest Resources and Forest Products Industry (Berkeley, 1963)
Department of Conservation
Division of Forestry

TABLE 25

CALIFORNIA TIMBER PRODUCTION, 1964

County	Number of timber operators[a]	Veneer logs and sawlogs (MBM)	Pulp wood (MBM)	Misc.[b] (MBM)	Total (MBM)
Alpine, Mono, Inyo	12	8,098	--	--	8,098
Amador	17	35,962	--	114	36,076
Butte	35	57,507	--	8,214	65,721
Calaveras	20	54,625	--	2	54,627
Del Norte	85	345,278	--	4,916	350,194
El Dorado	90	135,386	--	176	135,562
Fresno	16	73,984	--	33	74,017
Glenn	8	48,617	--	--	48,617
Humboldt	315	1,360,430	--	7,408	1,367,838
Lake, Colusa	11	36,088	--	734	36,822
Lassen	61	134,280	--	33	134,313
Madera	15	62,614	--	16	62,630
Mariposa, Merced	15	19,494	297	62	19,853
Mendocino	187	604,294	570	6,464	611,328
Modoc	24	48,463	--	--	48,463
Monterey, San Luis Obispo	11	211	2,050	1,200	3,461
Napa, Marin, Solano	9	1,794	297	4	2,095
Nevada	73	41,359	--	1,409	42,768
Placer	55	137,867	--	532	138,399
Plumas	86	212,514	--	2,227	214,741
San Bernardino, Los Angeles	5	9,154	59	90	9,303
San Diego, Riverside	2	40	--	150	190
San Mateo	14	32,563	74	5	32,642
Santa Clara, San Benito, Contra Costa, Stanislaus	5	--	1,705	27	1,732
Santa Cruz	33	18,396	2,025	175	20,596
Shasta	122	528,283	--	2,438	530,721
Sierra	57	122,249	--	21	122,270
Siskiyou	85	494,353	--	58	494,411
Sonoma	65	110,768	6,530	1,498	118,796
Tehama	23	136,592	--	1,833	138,425
Trinity	95	317,376	--	366	317,742
Tulare, Kern, Ventura	23	87,975	--	25	88,000
Tuolumne	24	110,121	--	25	110,146
Yuba	23	35,022	--	646	35,668
Total	1,435	5,421,757	13,607	40,901	5,476,265

a Includes active timber operators engaged in production of miscellaneous and other forest products.

b Miscellaneous forest productsinclude split products, poles, piling, fence posts, and cordwood.

Source: Department of Conservation
Division ofForestry

MAJOR LUMBER AREAS

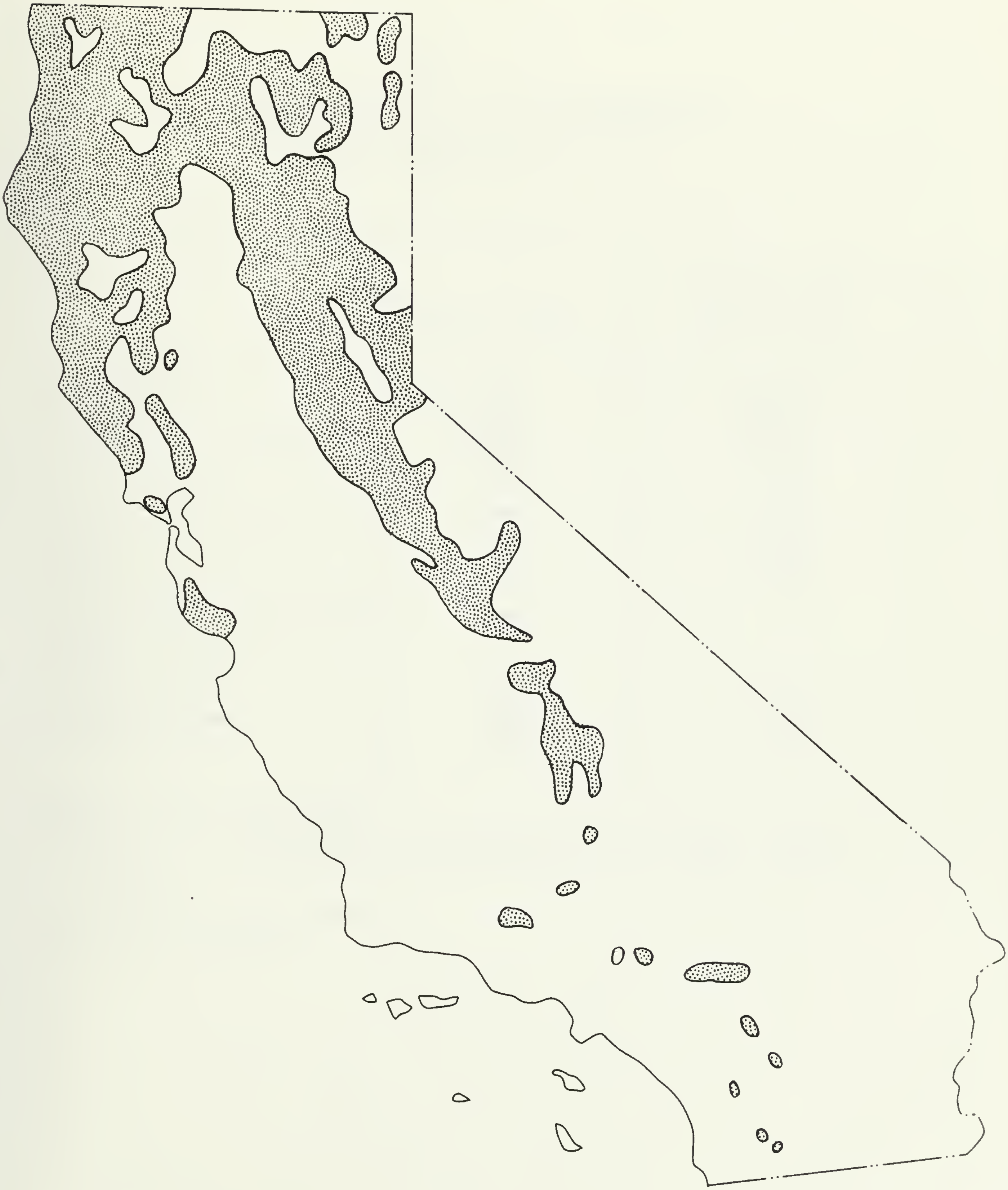


FIGURE 14

Table 26

NET VOLUME OF GROWING STOCK AND SAWTIMBER ON COMMERCIAL FOREST LAND IN CALIFORNIA, BY SPECIES, 1963

Species	Growing Stock (Million cu. ft.)	Sawtimber (MMBF International 1/4" log rule)
All softwoods	54,861	302,298
Douglas fir	17,761	98,973
Ponderosa and Jeffrey pine	10,496	58,398
True firs	13,804	75,303
Western hemlock	71	397
Sugar pine	3,798	23,223
Western white pine	314	1,808
Redwood	5,502	30,981
Sitka spruce	34	142
Englmann and other spruces	--	--
Western larch	--	--
Western redcedar	--	2
Incense cedar	1,747	8,275
Lodgepole pine	928	3,239
Other softwoods	406	1,557

MMBF: Million board feet

Source: U. S. Department of Agriculture, Forest Service, Timber Trends in the United States (Washington, D. C., 1965). Tables 13 and 15.

Department of Conservation
Division of Forestry

TABLE 27

Production of Other Forest Products in California, 1964

	Christmas trees (number)	Greenery (tons)
Alpine, Mono, Inyo	850	-
Amador	5,527	-
Butte	15,794	-
Calaveras	19,708	-
Del Norte	-	430
El Dorado	23,679	2
Fresno	3,940	-
Glenn	-	-
Humboldt	1,754	299
Lake, Colusa	1,632	-
Lassen	89,889	6
Madera	6,959	-
Mariposa, Merced	2,890	1
Mendocino	4,966	25
Modoc	26,044	-
Monterey, San Luis Obispo	325	-
Napa, Marin	2,025	-
Nevada	25,994	1
Placer	18,387	-
Plumas	154,450	3
San Bernardino, Los Angeles	-	-
San Diego, Riverside	500	5
San Mateo	-	-
Santa Clara, San Benito, Contra Costa, Stanislaus	5	-
Santa Cruz	7,151	30
Shasta	57,374	-
Sierra	35,178	-
Siskiyou	105,812	32
Sonoma	475	25
Tehama	32,950	-
Trinity	7,811	-
Tulare, Kern, Ventura	6,390	-
Tuolumne	7,443	-
Yuba	2,688	5
Total	668,590	864

TABLE 28

Production of Miscellaneous Forest Products in California, 1964

County	Split products (MBM	Poles piling (pieces)	Fence posts (pieces)	Fuel-wood (cords)j	Total (MBM)
Alpine, Mono, Inyo	-	-	-	-	-
Amador	-	1,001	89	27	114
Butte	-	81,921	2,000	-	8,214
Calaveras	-	-	200	-	2
Del Norte	4,911	46	-	-	4,916
El Dorado	-	1,736	-	5	176
Fresno	30	-	-	6	33
Glenn	-	-	-	-	-
Humboldt	5,473	19,347	-	-	7,408
Lake, Colusa	-	7,345	-	-	734
Lassen	4	-	-	58	33
Madera	-	-	100	30	16
Mariposa, Merced	-	599	-	5	62
Mendocino	4,474	19,384	-	104	6,464
Modoc	-	-	-	-	-
Montereay, San Luis Obispo, Santa Barbara	23	-	-	2,355	1,200
Napa, Marin	-	40	-	-	4
Nevada	30	13,706	700	2	1,409
Placer	-	5,102	-	44	532
Plumas	42	21,850	-	-	2,227
San Bernardino, Los Angeles	-	300	-	120	90
San Diego, Riverside	-	1,000	-	100	150
San Mateo	-	-	-	10	5
Santa Clara, San Beniro, Contra Costa, Stanislaus	-	-	-	45	27
Santa Cruz	7	-	-	336	175
Shasta	1	20,449	-	785	2,438
Sierra	-	191	-	3	21
Siskiyou	-	527	-	10	58
Sonoma	1,419	-	24	158	1,498
Tehama	4	18,296	-	-	1,833
Trinity	25	3,414	-	-	366
Tulare, Kern, Bentura	25	-	-	-	25
Tuolumne	25	-	-	-	25
Yuba	10	2,835	14,500	388	646
Total	16,503	219,089	17,613	4,591	40,901

TABLE 29

Lumber Production in California
1930, 1940, 1945, 1950-62

Year	Million Board Feet of Lumber Production	Year	Million Board Feet of Lumber Production
1930	1,514[a]	1955	5,319
1940	1,954	1956	5,882
1945	2,261[a]	1957	5,279
		1958	5,321
1950	4,253	1959	6,063
1951	4,843		
1952	4,837	1960	5,175
1953	5,109	1961	5,056
1954	5,113	1962	5,002

[a] Includes a relatively small volume of production in Nevada

Source: 1930-52 -- U.S. Department of Agriculture, Forest Service, Pacific Southwest Forest and Range Experiment Station, Forest Statistics for California, Berkeley, 1954, Table 34, 1953-62 -- U.S. Department of Commerce, Current Industrial Reports, series M13G and M24T.

Department of Conservation
Division of Forestry

and Christmas trees, are ready for use by final consumers. Most products however, such as sawlogs, peeler logs and pulpwood are manufactured into lumber, plywood, veneer wood pulp and other similar items in the primary manufacturing process. Other miscellaneous products include such items as shingles, cooperage stock, excelsior, charcoal, wood distillation products, gum, and wood naval stores.

Many products of primary manufacturing industries, such as newsprint, charcoal and turpentine are ready for marketing to final consumers at this stage. Other products such as dissolving grades of wood pulp, much of the paper and paperboard, and substantial parts of the lumber, veneer and plywood produced are further manufactured into containers, furniture, wearing apparel, and other consumer goods. This secondary manufacturing supports a large group of enterprises classified as the millwork and prefabricated wood products industry; the wooden containers industry; the furniture industry; the paper and paper board industry.

California, as the second largest timber producing State is an export State. The primary manufacturing process is essentially completed in California. Some lumber is shipped from the State in the primary stage, but the greater proportion of the total production, not used in basic construction within the State is taken up by the secondary manufacturing industries to convert the primary products into other end products prior to marketing. Many of these secondary products are shipped to other states. We do not have a source of detailed information on the proportions of the annual harvest channeled to the various industries and export outlets. Generally speaking, the timber producing lands and primary manufacturing industries are located in the northern half of the State and the secondary manufacturing industries are located in the southern half of the State. These industries are thus interdependent.

In 1964, some 5,500 million board feet of timber were cut in California with a base stumpage value of $134,750,000. Although the volume cut was somewhat lower than in 1958, values were higher. Reduced to the same economic basis as the 1958 estimate by the Forest Service, it is estimated that 245,000 persons were employed in timber related industries and values added to base stumpage amounted to $2,441,670,000 in 1964.

The immediate problem faced by the forest industries of the State is that of adjusting to a moderate decline in the total level of cut over the next 15 to 20 years while simultaneously adjusting from dominantly old growth timber to dominantly young growth and residual timber. Private holdings have been cut-over quite rapidly and with little concern for future sustained yield management. By 1980 the bulk of private holdings will be cut-over and private sources of timber will have shrunk. This

Statewide picture must in turn be viewed with the broader nationwide prediction for increased consumption.

TABLE 30 25/

Estimated Employment and Value Added Attributed to Timber in California, 1958 base.

Economic Activity	Value Added $	Employment
Forest Management	$124,900,000	8,600
Harvesting	153,950,000	16,100
Primary Manufacture	217,000,000	26,150
Secondary Manufacture	379,000,000	46,350
Construction	890,400,000	84,000
Transportation & Marketing	498,000,000	65,850
TOTAL	$2,263,250,000	247,050

In 1964, some 5,500 million board feet of timber were cut in California with a base stumpage value of $134,750,000. Although the volume cut was somewhat lower than in 1958, values were higher. Reduced to the same economic basis as the 1958 estimate by the Forest Service, it is estimated that 245,000 persons were employed in the timber related industries and values added to base stumpage amounted to $2,441,670,000 in 1964 as shown in the above Table 30.

b. Agriculture - California has the largest and most profitable agricultural economy in the Nation. It raises 200 different crops in substantial quantities. About 37 percent of the State is farmland (36,887,948 acres). Principal crops are cotton, alfalfa and hay, tomatoes, lettuce, oranges, barley, rice, peaches, potatoes, and sugar beets. In terms of value, cattle ranks first among all farm products produced. In 1964, farm receipts amounted to $3,654,015,000. Approximately 225,000 persons are currently employed in agriculture.

The value of farm land per acre increased from $71 in 1940 to $380 in 1959. The average farm size has increased from 230.1 acres per farm in 1940 to 380 acres in 1964, a 65 percent increase as compared with the national average of 303 acres. 24/ Farmers are becoming fewer as indicated by the fact that 11 percent of the population were farmers in 1940 compared to 2.7 percent in 1963, while the acreage going into farms increased 6 million acres for the same period. Farming larger land

holdings is necessary to make a paying business. It is also necessary to utilize all available land on a farm and to increase efficiency. Thus, there is a trend for "cleaner" farming operations, use of more efficient farm implements, and increased land manipulations. Small portions of farms which have been left as waste areas because of rough terrain or drainage problems will be leveled, filled and farmed.

About 7 percent of the State is irrigated farmland (7,395,570 acres). More than 16 million acres are considered sufficiently fertile and accessible to justify irrigation. Fresno, Tulare, Kern and Imperial Counties constitute four of the five major agricultural counties in the United States.

Currently, there are 80,846 farms in California as shown in Table 31. California's farms are larger in size than the national average. These farms are also considerably more prosperous than the average U.S. farm. In spite of the lack of Mexican bracero labor in 1966, cash farm receipts rose to over $4 billion, a new record as shown in Figure 15 and Table 32. Because of year-round farming, irrigation, and a relatively predictable climate, California's agriculture is exceptionally adaptable. Thus, the State's farmers are constantly changing to more profitable methods and crops. Table 33 compares California's farm commodities with national production.

Even though expanding urban areas are consuming farm acreage, the total farm acreage in the State is expected to grow considerably in the next several decades. What impacts BLM will feel are undeterminable; however, there are bound to be some public domain lands transferred to private ownership for the purpose of farming. Between 1964 and 1980 agricultural crop acreage is projected to increase 677,824 acres to a total of 11,224,000 acres. This will represent 11.2 percent of the land area of the State.

TABLE 31

NUMBER OF FARMS, TOTAL LAND AREA, AND LAND IN FARMS, BY COUNTY, 1964

County	Number of farms	Total land area (in acres)	Land in farms (in acres)	Cropland harvested (in acres)	Irrigated[a] land in farms (in acres)
Total	80,846	100,206,720	36,996,327	7,837,133	7,590,801
Alameda	908	469,120	309,843	42,515	24,227
Alpine	9	462,720	12,716	1,174	2,692
Amador	229	379,520	207,089	4,408	3,815
Butte	1,933	1,064,320	680,320	185,418	170,433
Calaveras	346	657,280	362,644	3,258	4,393
Colusa	601	737,920	532,151	239,255	163,606
Contra Costa	1,340	469,760	311,399	71,031	56,407
Del Norte	171	641,920	35,948	3,879	4,494
El Dorado	357	1,096,960	197,696	4,432	5,796
Fresno	7,293	3,816,960	2,199,290	992,104	1,059,108
Glenn	1,312	842,880	631,024	190,135	151,298
Humboldt	1,099	2,286,720	787,165	18,877	19,184
Imperial	942	2,741,760	589,012	404,910	426,207
Inyo	102	6,462,080	370,833	3,310	19,552
Kern	1,582	5,217,280	3,605,404	561,993	603,659
Kings	1,251	892,800	876,773	391,838	436,037
Lake	860	803,840	246,112	27,032	15,322
Lassen	334	2,910,080	651,932	60,752	61,991
Los Angeles	2,800	2,598,400	585,340	90,583	78,824
Madera	1,407	1,372,160	774,738	226,218	212,052
Marin	289	332,800	172,886	5,523	688
Mariposa	218	931,200	306,462	772	1,305
Mendocino	1,336	2,244,480	1,068,071	25,808	14,614
Merced	3,161	1,268,480	1,044,394	291,915	377,817
Modoc	528	2,618,880	900,347	125,930	133,759
Mono	34	1,937,920	70,261	3,627	11,386
Monterey	1,115	2,127,360	1,489,324	234,857	177,906
Napa	1,046	485,120	262,743	36,381	10,909
Nevada	350	625,920	197,610	2,644	7,804
Orange	1,542	500,480	242,839	63,937	54,893
Placer	1,126	911,360	248,934	35,375	28,571
Plumas	93	1,644,800	123,480	12,013	31,320
Riverside	2,651	4,593,280	737,577	270,210	228,593
Sacramento	1,759	629,120	568,410	159,668	169,595
San Benito	652	893,440	779,007	55,563	38,820
San Bernardino . . .	2,656	12,880,000	1,789,775	80,432	81,173
San Diego	4,212	2,723,200	685,364	64,278	52,436
San Francisco	21	28,800	58[b]	38	38
San Joaquin	4,361	901,760	963,675	456,764	496,948
San Luis Obispo . . .	1,390	2,122,240	1,525,435	163,361	30,357
San Mateo	336	290,560	83,273	16,020	5,517
Santa Barbara	1,048	1,752,320	926,953	90,010	65,079
Santa Clara	2,631	833,280	458,283	96,476	79,410
Santa Cruz	821	280,960	103,261	27,080	23,177
Shasta	834	2,430,720	743,978	23,244	56,797
Sierra	41	613,120	51,379	5,998	10,741

TABLE 31

Page 2 of 2 pages

NUMBER OF FARMS, TOTAL LAND AREA, AND LAND IN FARMS, BY COUNTY, 1964

County	Number of farms	Total land area (in acres)	Land in farms (in acres)	Cropland harvested (in acres)	Irrigated[a] land in farms (in acres)
Siskiyou	716	4,039,680	994,889	96,634	113,788
Solano	876	529,280	381,348	136,850	112,355
Sonoma	3,554	1,010,560	694,094	83,771	27,985
Stanislaus	4,881	960,000	811,591	279,059	349,694
Sutter	1,412	388,480	386,426	234,029	195,572
Tehama	1,405	1,904,640	1,168,133	61,812	72,613
Trinity	158	2,042,240	133,064	2,008	2,535
Tulare	5,517	3,096,320	1,398,836	556,117	580,861
Tuolumne	192	1,455,360	168,947	724	2,272
Ventura	1,507	1,184,640	436,931	106,735	103,161
Yolo	861	661,760	593,750	349,668	252,234
Yuba	640	407,680	317,110	58,680	68,981

a Includes both cropland and pasture.

b Exceeds land area because entire acreage of a farm is tabulated as in the county in which the farm headquarters is located, even though a part of the farm may be located in an adjoining county.

Source: U. S. Department of Commerce, Bureau of the Census, 1964 U. S. Census of Agriculture.

MAJOR FARM PRODUCTS

ANNUAL VALUE IN MILLIONS

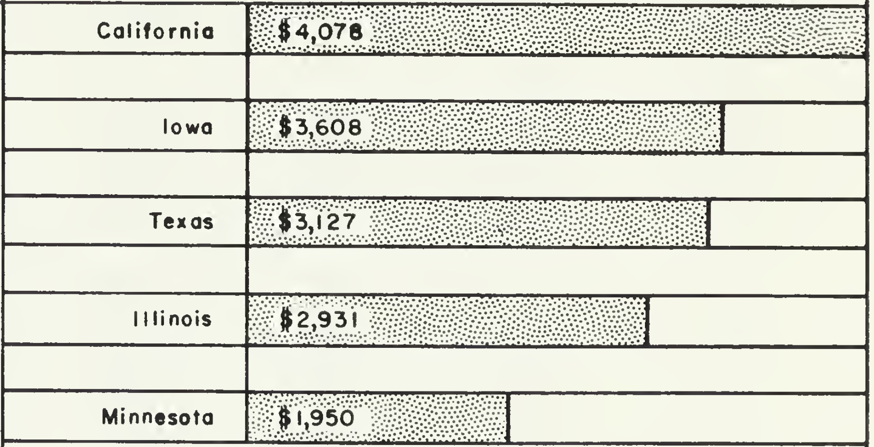
Cattle & Calves	711
Dairy Products	422
Eggs	229
Hay	202
Cotton(Lint & Seed)	196
Grapes	172
Tomatoes	171
Lettuce	137
Oranges	110
Peaches	88
Barley	83
Rice	82
Turkeys	76
Potatoes	70
Sugar Beets	64

1/ SOURCE: California Crop & Livestock Reporting Service, California Department of Agriculture, May 1967

2/ Based on value of quantity produced from crops and on value of quantity marketed from livestock and poultry products.

TOTAL FARM INCOME
(leading states)

ANNUAL VALUE IN MILLIONS



SOURCE: 1966 income reported by U.S. Department of Agriculture.

FIGURE 15

TABLE 32

CASH FARM RECEIPTS, BY COMMODITY GROUP, FIVE-YEAR AVERAGES 1930-49, ANNUAL 1950-64

(In thousands)

Yearly average or year	Total	Field crops	Fruit and nut crops	Vegetable crops	Livestock and poultry	Government payments	Miscellaneous[a]
1930-34	$498,255	$80,646	$180,571	$69,379	$166,906	$753	b
1935-39	635,993	122,939	197,035	83,984	222,109	9,926	b
1940-44	1,221,008	203,822	432,299	163,538	375,984	23,268	$22,097
1945-49	2,103,681	455,809	569,660	289,614	722,596	24,236	41,766
1950	2,315,267	605,677	524,656	270,052	847,220	13,641	54,021
1951	2,781,699	709,034	539,412	360,632	1,096,190	13,490	62,941
1952	2,743,678	794,419	480,796	352,833	1,039,589	11,206	64,835
1953	2,655,356	772,668	492,370	339,240	973,390	10,040	67,648
1954	2,534,567	702,673	511,383	332,461	905,281	14,802	67,967
1955	2,692,172	667,317	587,400	378,047	966,602	11,970	80,836
1956	2,849,121	732,135	628,608	388,209	996,166	17,370	86,633
1957	2,791,298	696,303	564,160	390,147	1,018,490	31,647	90,551
1958	2,889,934	714,227	594,170	382,889	1,079,445	23,329	95,874
1959	3,143,091	848,139	614,701	415,789	1,136,786	23,712	103,964
1960	3,210,879	815,989	614,529	407,600	1,245,120	21,913	105,728
1961	3,267,527	805,179	620,129	429,855	1,276,175	27,938	108,251
1962	3,458,193	825,083	638,210	481,926	1,350,636	31,444	130,894
1963	3,558,907	869,065	691,174	460,931	1,366,912	32,181	138,644
1964	3,698,225	915,013	770,618	511,869	1,303,006	34,054	163,665
1965	3,737,365	886,224	678,109	539,107	1,418,322	41,258	174,345
1966[c]	4,051,929	856,085	713,512	632,028	1,556,763	103,881	189,660

[a] Forest, nursery, and greenhouse products.

[b] Included with field crops.

[c] Preliminary.

California Department of Agriculture
Bureau of Agricultural Statistics

TABLE 33

California's Agriculture Commodities: Their Importance, and Leading Producing Counties, 1966

Commodity	Calif.[a] ranks (number)	Nat'l[b] ranks (number)	Calif. share of U.S. Production (percent)	Counties
Cattle & calves	1	5	5.1	Imperial, Kern, Fresno
Milk & cream	2	4	7.1	Los Angeles, Stanislaus, San Bernardino
Cotton lint	7	3	13.1	Kern, Fresno, Tulare
Eggs, chicken	3	1	11.5	San Bernardino, Riverside, San Diego
Hay	4	4	6.1	Imperial, Kern, Fresno
Grapes	5	1	91.1	Fresno, Tulare, Kern
Tomatoes	6	1	60.2	San Diego, Ventura, San Joaquin
Oranges	9	2	22.8	Tulare, San Bernardino, Orange
Potatoes	14	3	11.4	Kern, Riverside, San Joaquin
Lettuce	8	1	62.4	Imperial, Monterey, Santa Barbara
Sugar beets	15	1	26.0	Imperial, Yolo, San Joaquin
Barley	11	2	17.3	Fresno, Kings, Imperial
Rice	12	4	22.4	Colusa, Sutter, Butte
Peaches	10	1	64.4	Fresno, Stanislaus, Tulare

California Agriculture Commodities - page 2

Commodity	Calif.[a] ranks (number)	Nat'l[b] ranks (number)	Calif. share of U.S. Production (percent)	Counties
Turkeys	13	1	15.7	Fresno, Los Angeles, Stanislaus
Strawberries	20	1	37.9	Monterey, Orange, Santa Cruz
Almonds	16	1	99.9[c]	Butte, San Joaquin, Merced
Prunes	19	1	98.5	Santa Clara, Sonoma, Sutter
Pears	25	1	48.7	Sacramento, Santa Clara, Lake
Lemons	18	1	87.5	Ventura, Santa Barbara, Los Angeles
Walnuts	22	1	96.3	San Joaquin, Contra Costa, Tulare
Cotton seed	29	3	10.0	Kern, Fresno, Tulare
Chickens, broilers & fryers	23	10	2.9	Sonoma, Stanislaus, San Joaquin
Celery	23	1	54.6	Monterey, Ventura, San Luis Obispo
Cantaloups	25	1	53.9	Riverside, Fresno, Merced

[a] Based on quantity produced for crops and on quantity marketed for livestock and poultry products.

[b] Based on value of quantity produced for crops and on value for crops and on value of quantity marketed for livestock and poultry products.

[c] Current estimate available for California or Pacific Coast States only. Share of U.S. production basis 1959 Census of Agriculture.

Source: California Statistical Abstract - 1965, pp. 33-35.

c. Mining and Petroleum and Gas - The following narrative taken from the publication "California's Economic Diversity - July 1964" by Wilber McCann is a good summary of California's mining and petroleum and gas industry.

California is the most diversified mineral State in the Union, producing more than twice as many types of minerals as the next leading state.

It is the only domestic source of boron minerals, and leads all other states in the production of: cement, diatomaceous earth, gypsum, iodine, mercury, rare earths, sand and gravel, sodium sulfate and sulfur ore. Other minerals produced are:

- Asbestos
- Barite
- Boron
- Bromine
- Calcium Chloride
- Carbon Dioxide
- Clays
- Copper
- Feldspar
- Gem Stones
- Gold
- Iron Ore
- Lead
- Lime
- Lithium
- Magnesite
- Magnesium compounds
- Mica
- Molybdenum concentrates
- Peat
- Perlite
- Platinum
- Potash
- Pumice
- Pyrites
- Salt
- Silver
- Sodium Carbonate
- Stone
- Talc
- Tungsten
- Uranium
- Wollastonite
- Zinc

"The world's largest known deposits of rare earth are found in the Golden State. Rare earths are the so-called Space-Age metals, the uses of which are in the infancy of development but which already include applications in laser light, metallurgy, microwaves and nuclear reactors.

Mining has always been important in California, not only from the standpoint of gross dollar volume, but also because of the variety and kinds of meterials that have assisted and supported other economic activities in the State. For example, low-cost gypsum has helped its agriculture, and barite and clays have helped its oil industry.

Gold was a major factor in giving the State its dramatic start in the early days, and some gold is still produced (about $4 million annually), but a multitude of other minerals have long since forged ahead in economic importance."

The annual production and value of major minerals produced between 1940 and 1965 are shown in Table 34. Table 35 summarizes the value of fuel, metal and non-metal production for the period 1931 to 1965.

Commercial mineral counties in ranking order are: Kern, Los Angeles, Ventura, Orange, Santa Barbara, Fresno, San Bernardino, Riverside, Monterey, and Santa Clara; however, San Bernardino and Riverside Counties continue to lead in the production of metallic and nonmetallic minerals. Major increases are reported for production of boron minerals and rare earth oxides from San Bernardino County and iron ore from Riverside County.

Short-fibre asbestos from the Coalinga area of Fresno County is the newest major mineral commodity produced in the State. This great expansion is highlighted by the following record: 1963 production was 19,500 tons of asbestos, 1965 - 55,000 tons and 1965 - 70,000 tons valued at $6,009,000.

Reopening of several mercury mines will continue California's national leadership in mercury production.

Petroleum and gas production in California ranks third in the Nation, with Texas and Louisiana ranking first and second. The State's 38,000 wells produce approximately a billion dollars worth of crude oil and gas annually. The petroleum industry plays a major role in the California economy, not only by helping to satisfy its large local appetite for these products, but by contributing to the growing chemical industry in the State. Petroleum refining and petro-chemicals are major manufacturing activities that are directly related to the State's oil and gas producing capacities.

Even though California ranks third in the Nation in petroleum production, it is a net importer of crude oil and gas to meet local needs. The State is, however, a major exporter of refined petroleum products, and is the focal point for distribution throughout the western United States, to Hawaii and other points in the Pacific.

Figure 16 shows the location of major oil and gas fields in California as shown in Table 36. Over 80 percent of California's crude oil production comes from six counties in descending order of value: Kern, Los Angeles, Orange, Ventura, Santa Barbara and Fresno. 26/ Natural gas production for the five year period 1958-1964 is listed in Table 37.

Another California first is the harnessing of geothermal steam. Sonoma County and the Salton Sea area of Imperial County where a chemically rich brine is a coproduct with the steam are receiving increased attention.

TABLE 34

CALIFORNIA MINERAL OUTPUT, BY COMMODITY, SELECTED YEARS, 1940-65

(Value in thousands)

Commodity	Unit	1940		1950		1960		1965	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Total value . .		--	$342,826	--	$1,056,047	--	[a]$1,404,733	--	$1,588,519
Petroleum	M barrels . .	223,295	207,480	327,607	707,630	305,352	751,166	316,428	753,099
Natural gas . . .	M M cubic feet	352,872	20,619	558,398	66,449	517,535	138,182	643,788	193,190
Natural gas liquids	M barrels . .	--	--	28,328	80,024	28,644	83,978	23,687	65,317
Copper	tons	6,417	1,450	646	646	1,087	698	--	825
Gold	M troy ounces	1,456	50,948	412	14,424	124	4,330	1,165	2,201
Lead	tons	1,546	155	15,831	4,274	440	103	1,810	565
Mercury	M flasks . .	19	3,209	4	313	19	3,955	13	7,650
Silver	M troy ounces	2,360	1,678	1,072	970	180	163	197	254
Other metals . . .	--	--	2,509	--	6,917	--	28,368	--	55,790
Cement	M barrels . .	13,955	17,673	26,685	65,259	39,712	128,826	45,352	144,852
Clay	M tons . . .	324	688	1,455	2,905	2,899	5,663	3,207	7,226
Gypsum	M tons . . .	315	600	962	2,463	1,616	3,687	1,611	3,881
Pumice	M tons . . .	35	127	157	971	427	1,895	676	1,744
Sand and gravel .	M tons . . .	16,279	7,769	41,894	35,548	87,679	107,503	118,310	136,227
Stone, miscellaneous	M tons . . .	--	4,658	11,825	13,998	33,075	49,842	42,575	59,668
Talc	M tons . . .	37	329	109	2,069	130	1,396	141	1,725
Other nonmetallics	--	--	9,259	--	12,510	--	27,535	--	53,790
Borates	M tons . . .	212	5,254	647	15,890	641	47,550	807	64,180
Salt	M tons . . .	462	1,921	868	3,817	1,443	b	1,638	b
Other salines . .	--	--	7,130	--	19,348	--	36,361	--	35,746

a Total adjusted to avoid duplicating the value of clays and stone used in manufacturing cement and lime.

b Combined with other salines to avoid disclosing confidential data.

Source: Department of Conservation
Division of Mines and Geology and Division of Oil and Gas, in cooperation with U. S. Bureau of Mines.

TABLE 35

VALUE OF CALIFORNIA MINERAL PRODUCTION, BY FUELS, METALS, AND NONMETALS, 1931-65

(In thousands)

Year	Total	Fuels	Metals	Nonmetals
1931	$215,964	$158,604	$13,535	$43,825
1932	199,196	156,199	12,364	30,633
1933	206,489	158,479	16,256	31,754
1934	237,375	173,991	26,616	36,768
1935	263,404	197,049	33,199	33,156
1936	327,804	230,255	41,392	56,157
1937	361,516	257,709	46,454	57,353
1938	380,445	280,667	49,590	50,188
1939	352,463	247,911	55,376	49,176
1940	342,826	228,104	59,950	54,772
1941	374,326	240,361	61,596	72,369
1942	408,738	268,179	46,186	94,373
1943	426,445	317,370	27,703	81,372
1944	469,775	362,459	24,040	83,276
1945	473,662	378,120	16,928	78,614
1946	559,449	433,718	23,895	101,836
1947	843,413	684,477[a]	25,361	133,575
1948	1,146,411	967,158[a]	25,275	153,978
1949	1,074,416	902,991[a]	25,031	146,394
1950	1,056,047	841,128[a]	27,168	187,751
1951	1,209,428	961,994[a]	42,873	204,561
1952	1,214,870	969,776[a]	43,016	202,078
1953	1,392,797	1,121,145[a]	39,581	232,071
1954	1,426,576	1,123,662	40,168	262,746
1955	1,450,501	1,115,168	51,413	283,920
1956	1,543,978	1,138,773	55,804	349,401
1957	1,650,035	1,254,904	43,982	351,149
1958	1,500,367	1,105,767	38,166	356,434
1959	1,424,176	987,704	35,597	400,875
1960	1,404,733	974,055	36,951	393,727
1961	1,419,665	965,847	33,922	419,896
1962	1,450,100	977,692	33,324	439,084
1963	1,526,241	1,007,739	40,669	477,833
1964	1,560,510	998,152	58,441	503,917
1965	1,588,519	1,012,195	67,285	509,039

[a] Beginning in 1947 the value of natural gasoline, and liquefied petroleum gases was reported and included in the total for fuels.

Source: Department of Conservation
Division of Mines and Geology, in cooperation with U. S. Bureau of Mines.

MAJOR OIL AND GAS FIELDS

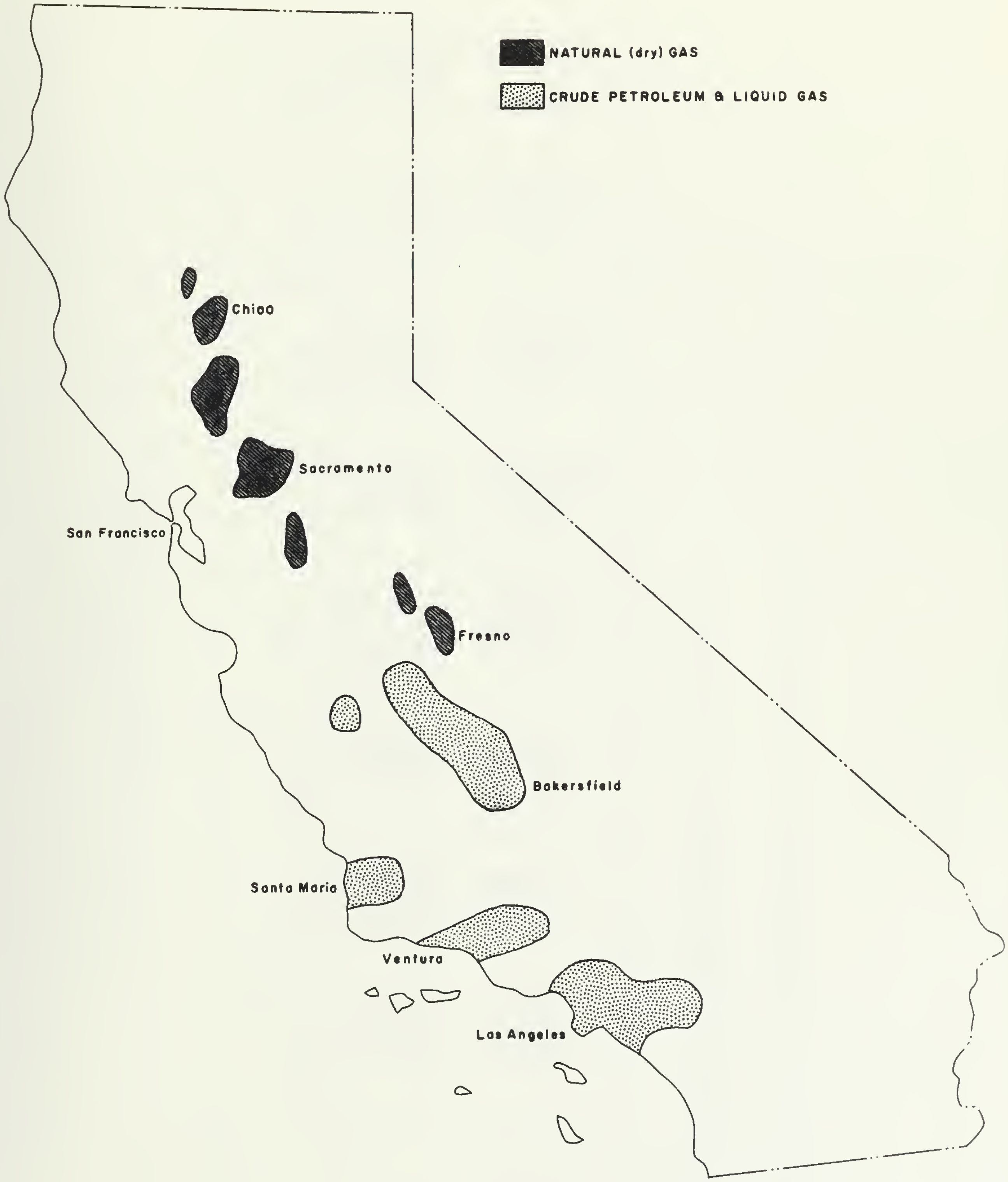


Table 36

CALIFORNIA PETROLEUM OUTPUT,[a] BY COUNTIES, 1961-64

(Value in thousands)

County	1961		1962		1963		1964	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Fresno..........	21,712	$ 71,794	26,730	$ 71,266	25,243	$ 66,759	23,451	$ 60,857
Kern............	92,680	220,122	90,595	221,434	95,219	230,859	97,870	232,844
Kings...........	1,600	4,594	1,388	4,102	1,232	3,612	1,215	3,495
Los Angeles.....	69,726	173,569	74,386	190,563	78,233	198,802	77,422	193,058
Monterey........	11,865	18,113	11,230	17,642	10,171	15,850	10,234	15,649
Orange	32,321	78,886	31,320	78,668	31,749	79,103	32,439	79,308
San Luis Obispo.	1,362	3,782	1,260	3,601	1,219	3,456	1,167	3,246
Santa Barbara...	23,720	56,743	25,487	62,745	26,138	63,829	26,972	64,632
Ventura.........	37,947	98,512	33,705	90,048	30,634	81,184	27,786	72,257
Other counties[b].	--	--	--	--	895	2,798	1,453	3,676

[a] Unit-M barrels.

[b] Includes Contra Costa, Riverside, San Benito, San Bernardino, San Mateo, Solano and Tulare counties.

Source: Department of Conservation
Division of Oil and Gas, in cooperation with U.S. Bureau of Mines.

TABLE 37

CALIFORNIA NATURAL GAS OUTPUT,[a] BY COUNTIES, 1959-64

(Value in thousands)

	1959		1960		1961		1962		1963		1964[b]	
County	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value
Butte	4,050	$2,094	11,701	$3,124	13,097	$3,648	9,305	$2,698	9,369	$2,745	9,607	$2,873
Colusa	5,180	1,199	9,203	2,457	10,570	2,944	13,688	3,969	15,725	4,607	15,673	4,686
Fresno	30,368	7,027	27,587	7,215	26,798	7,465	28,270	8,198	27,286	7,995	29,487	8,817
Glenn	32,468	7,513	30,502	8,144	27,992	7,798	18,186	5,273	18,074	5,296	18,050	5,397
Humboldt	998	231	n.a.	n.a.	1,391	387	1,433	415	2,057	603	1,979	n.a.
Kern	108,329	25,068	117,716	30,960	122,780	34,202	115,428	33,474	117,291	34,366	116,698	34,893
Kings	10,571	2,446	8,852	2,354	15,697	4,373	10,967	3,180	18,537	5,431	23,574	7,049
Los Angeles . . .	58,980	13,649	56,412	15,018	67,159	18,708	82,574	23,946	85,720	25,116	81,339	24,320
Madera	2,589	599	2,304	615	2,544	709	2,039	591	1,936	567	1,958	n.a.
Orange	28,826	6,670	27,587	7,315	30,942	8,619	32,947	9,554	32,290	9,464	31,892	9,536
Sacramento . . .	40,065	9,271	46,215	12,338	55,911	15,575	50,638	14,685	52,330	15,333	47,658	14,250
San Joaquin . . .	5,117	1,184	13,268	3,542	14,707	4,097	22,299	6,466	40,106	11,751	43,598	13,036
San Luis Obispo .	1,238	286	1,058	248	875	244	791	229	646	189	704	n.a.
Santa Barbara . .	18,755	4,340	20,179	5,292	24,484	6,820	33,459	9,703	53,385	15,642	70,196	20,989
Solano	31,868	7,374	39,769	10,618	39,953	11,129	37,234	10,797	44,933	13,165	43,809	13,099
Tulare	6,339	1,467	6,255	1,670	6,393	1,781	5,357	1,553	5,220	1,530	5,019	1,501
Ventura	91,982	21,285	87,290	23,247	85,578	23,839	76,385	22,151	65,290	19,130	58,913	17,615
Yolo	n.a.	n.a.	n.a.	n.a.	1,322	368	2,029	588	2,059	603	1,533	458
Other Counties. .	n.a.	n.a.	n.a.	n.a.	--c	--c	--c	--c	54,223	15,887	62,364	20,032

n.a. Not available.

Department of Conservation

Division of Mines and Geology and Division of Oil and Gas, in cooperation with U. S. Bureau of Mines.

a Unit - MM cubic feet.

b Preliminary.

c Includes Contra Costa, Monterey, San Benito, San Bernardino, San Mateo, Sonoma, Sutter, and Tehama counties.

Another important achievement of the State's oil industry has been its success in off-shore drilling and its current efforts to tap the vast resources believed to be beyond the continental shelf. The ocean floor, in addition to being important to the State's oil industry contains vast quantities of minerals, particularly manganese in the form of nodules. Although no production has materialized yet, the State, private industry, and the Federal Government have joined in cooperative research efforts to develop these marine resources.

d. Recreation and Tourism - Recreation and tourism lend strong basic support to the California economy. It is impossible to separate the investment and return from recreation versus tourism as they are so interelated. What we do know is that about 1.2 billion dollars of new money was brought into the State in 1966 by 7.2 million visitors from out of the State according to the combined estimates by the All-Year Club of Southern California and the San Francisco Convention and Visitors Bureau. We also know that among the almost 400 public agencies striving to meet the needs of over 19 million people in the State, plus the 7 million visitors, 180 million dollars were spent in 1966 for the acquisition of lands, development of facilities, and administration of programs.

During the past ten years California's cities have spent more than any other level of government in meeting outdoor recreation needs. State agency budgets are next in line in funding of programs with Federal and local park districts making up the majority of public monies expended on recreation.

RESOURCE END PRODUCTS from BLM ADMINISTERED LANDS - PRESENT PRODUCTION AND 1980

III. RESOURCE END PRODUCTS - PRESENT PRODUCTION THROUGH 1980

As determined in the preceding section, BLM's primary linkage to the future economic growth and development of the California economy is related to four basic resource oriented industries: forestry and lumber, agriculture, recreation and tourism, and mining and petroleum and gas.

In the sections which follow, a profile is developed of the present and future demands to 1980 for resource products from BLM administered lands in California. The following public land products are discussed:

Wood Products
Livestock Grazing
Wildlife
Minerals
Water
Recreation

A. Wood Products

1. Present Situation - In 1964 forest products harvested from lands administered by BLM in California amounted to 30,150 M bd. ft. of sawtimber, 185 cords of fuelwood, plus other miscellaneous products of a total stumpage value of $682,451. Based on the Forest Service study, the total contribution to the gross national product was $17,061,000. In 1965, forest products sales amounted to 52,305 M bd. ft., with a base stumpage value of $1.2 million and contributed approximately $30 million to the Gross National Product.

Table 38 indicates current production of the commercial forest lands administered by BLM on which inventory has been completed. It is important to note that approximately 1.7 million acres of marginal land and land covered with hardwoods and other miscellaneous species are not included. An inventory of these other lands is needed to determine their potential production. The location of BLM's commercial forest lands are shown in Figure 17.

Production from BLM lands enters the mainstream of commerce in California and becomes an integral part of the total State production. By and large, BLM sales are made to the smaller operators and smaller businesses. Although the percentage of the total State production supplied by BLM is small, it is of great significance in keeping numerous small operators and small communities in business. These operators make a healthy contribution to the total State economy and we are unable to determine

TABLE 38

Standing Volumes, Current Annual Cut and Optimum Potential of Commercial Forest Lands Inventoried to Date

District	Area in Acres	Standing Volume bd. ft.	Current Annual Cut bd. ft.	Optimum Potential bd. ft.
Bakersfield	1,170	9,360,000	200,000	500,760
Susanville	30,179	203,949,682	4,100,000	7,092,065
Redding	67,810	759,268,570	13,900,000	29,022,680
Sacramento	41,426	510,116,502	9,700,000	20,327,158
Ukiah	98,457	1,547,842,500	23,400,000	30,915,498
TOTAL	239,042	3,030,537,250	51,300,000	87,858,161

COMMERCIAL TIMBER STANDS ON THE PUBLIC LANDS

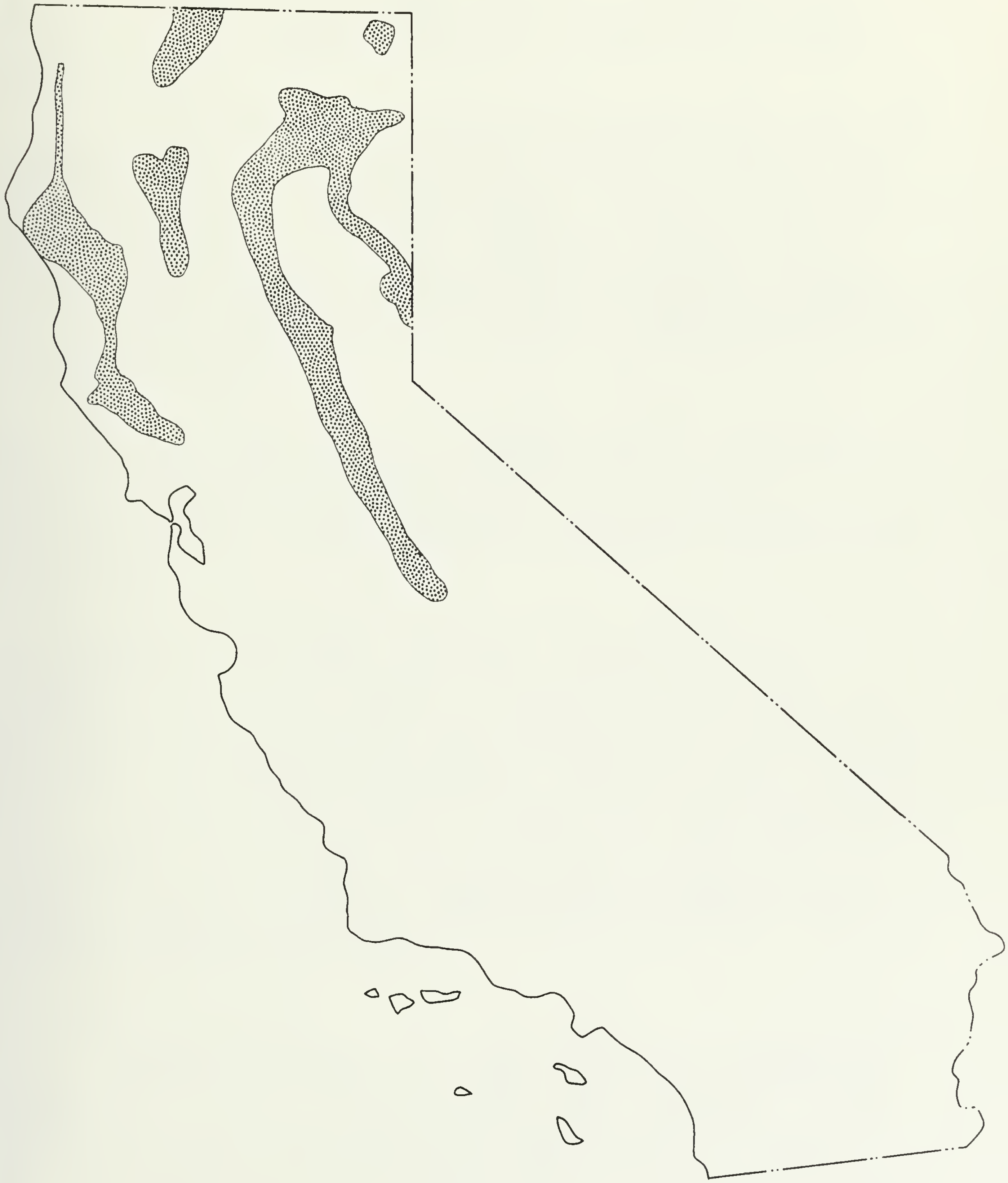


FIGURE 17

that the pattern of use to which production from BLM lands is applied varies significantly from the total State pattern. BLM's current contribution is about 1 percent in the timber based industries.

2. Forecast to 1980 - By 1980 requirements for production from BLM lands will be considerably increased. Federal lands with remaining old growth stands will be under increased pressure to cut as private holdings shrink. As these overall forces of increasing demands are pitted against dwindling supplies, better utilization is expected. Pressures already felt in California are forcing a trend towards some complete changes in utilization. Trends are towards use of thinner material, use of poorer grades for plywood cores and increased production of chipboards, particle boards and paperboards from low grade or waste material.

BLM has the potential of nearly doubling current production but only over a long period of time and only if funds and manpower are made available to bring all forest lands under intensive management. Hardwood stands have generally not been utilized to date. By 1980 there will be increasing demands to cut hardwood stands for wood fibre in addition to sawlogs and peeler logs.

Forest lands administered by BLM have the economic potential to considerably increase production. Inventory, access and management plans including rehabilitation are necessary to accomplish this result. Such an increase can be accomplished under multiple use principles simultaneously with better watershed and wildlife management while accomodating a considerable increase in recreational development. Mining use must continue to be accommodated, particularly in the State's Mother Lode belt. Inroads on land area will be made for other uses such as housing development, reservoirs and roads but these will diminish under sound economic considerations of public need. Failure to develop and manage these lands as indicated would constitute mismanagement of a basic natural resource, which is seriously needed in the future.

B. Livestock Grazing

1. Present Situation - The data in Table 39 summarize a rough comparison of livestock numbers and forage consumption on BLM lands with that of the entire range livestock industry (excluding dairy but including feedlot) in California. In total forage requirement BLM lands supply only 1.6 percent of the State total. Such a comparison fails to give a true picture of the part BLM range lands occupy in the range country of the State. BLM administered range lands generally are of low productivity when compared with the high producing irrigated

grain, hay, and pasture lands of the interior valley regions. However, they do supply a vital link of the range operation in local areas where the acreage of public lands is substantial and the local economy is dependent primarily on range livestock. In such areas BLM range lands provide forage during a period of the year that feed from ranch or other private lands is not available. The period varies from two to eight months depending on location. The dependence upon public lands in such areas is high and because of this fact the lands are vital to the local economy.

Comparisons in livestock numbers and forage consumption on BLM lands and the total for California's two BLM statutory grazing districts (Susanville and Bakersfield) is also made in Table 39. In these areas range livestock is an important part of the local economy. There is practically no dairy industry and little or no livestock fed in feed lots.

The Bakersfield and Carson City (California portion) District comparisons in Table 39 show the number of animals using BLM lands in these two districts which includes most of the public lands in Inyo and Mono Counties. The total number of animals exceeds the tabulated range livestock population of the two counties. This is due to the fact that a substantial number of the livestock grazing BLM lands are based on ranches in adjoining counties.

TABLE 39

TOTAL STATE LIVESTOCK PRODUCTION AND PRODUCTION ON BLM LANDS

	Beef Cattle Number	Stocksheep Number	Total Annual AUM reqm't
Total for State	2,499,000	1,350,000	33,228,000
Total for BLM lands	154,389	260,763	538,208
Percent	6%	19%	1.6%
Susanville District			
Total Lassen-Modoc Cos.	143,000	33,000	1,795,200
BLM Lands only	44,386	13,741	154,378
Percent	31%	40%	9%
Bakersfield & Calif. Portion of Carson City			
Total Inyo-Mono Cos.	23,775	4,450	295,980
BLM Land Sec. 3 only	25,077	127,816	111,113
Percent	--	--	38%

All forage produced on BLM lands is used "in place" either by range livestock or by game animals. In addition to livestock consumption an estimated 251,300 big game animals consume 193,630 Animal Unit Months of forage produced on BLM lands. Of all forage consumed on BLM land, big game use is approximately 26 percent. Approximately 15 to 20 percent of the forage produced on BLM lands remains unused. This is due to inaccessibility, low value or other competing land uses.

Products from livestock on BLM lands are used largely by industries within the State. Most of the range livestock are finished in California feedlots or pastures then slaughtered and either processed or consumed within the State. The State is deficient in meat products and imports 70 percent of its pork, 30 percent of its beef and 32 percent of its lamb. With a projected increase of 10 million people by 1980, California will not be able to feed its population and will continue to import much of its meat products. Feedlot operations and pasture lands, however, should feel the bulk of increased demands as other states ship livestock into California for finishing and slaughter. However, the demand for livestock use of BLM administered range lands will continue to increase. Most of the wool and some of the hides will be exported outside the State for processing.

Overgrazing by domestic livestock and big game on public lands under Bureau of Land Mnaagement jurisdiction is a real and serious problem. It is, of course, more widespread and severe with livestock. On lands inside grazing districts (Susanville and a part of Bakersfield) range adjudication programs are in progress whereby livestock use is balanced with estimated carrying capacity. In those areas a "reasonable allowance" is made for big game. Reasonable allowance is a rather indifinite term but generally amounts to the forage needed by the number of animals considered proper. This number is usually worked out in cooperation with the Bureau of Land Management and the Department of Fish and Game. The adjudication program is about 70 percent complete and is scheduled for completion in 1967 or 1968. It covers less than half of the Bureau of Land Management lands under grazing use in the State.

The remaining public lands in grazing use are outside grazing districts and are administered under grazing leases. Little has been done from a management standpoint on these lands, chiefly due to a lack of administrative personnel, inadequate control under the leasing procedure, and more intricate patterns of land ownership in the lease areas. The personnel situation has recently improved, and the lease regulations are in the process of revision to give more managerial control. The Bureau of Land Management has been inventorying these lands for the past few years and plans to gradually place grazing stipulations for both livestock and game on future leases. This work is

being accelerated in cooperative Land and Wildlife Management areas.

Under these programs, present trends in livestock use are downward and grazing practices are towards range allotments, shorter use seasons, and intensified management.

Table 40 shows the present condition and trend of the range lands administered by BLM in California.

TABLE 40

Range Condition and Trend Data   Calendar Year 1963 (California)

	Ex. to Good	Fair	Bad & Poor	Improving	Static	Deteriorating
Grazing Districts	14%	73%	13%	7%	82%	11%
Leases	7%	41%	52%	1%	92%	7%

Livestock Trends (numbers)

	Cattle & Horses			Sheep & Goats		
	1950	1957	1962	1950	1957	1962
Licenses & Permits	105,200	106,970	74,420	139,400	141,000	185,184
Leases	*	*	96,350	*	*	130,450

Livestock Trends (AUMs)

	Cattle & Horses			Sheep & Goats		
	1950	1957	1962	1950	1957	1962
Licenses & Permits	404,000	290,700	255,900	89,120	83,000	71,340
Leases	*	*	238,000	*	*	67,000

* Grazing lease lands not completely administered during this period. Livestock numbers do not reflect trends in total numbers.

The only data on livestock trends comes from California's two grazing districts which define a substantial decrease in cattle numbers and Animal Unit Months of use from 1950 through 1962. A proportionately greater reduction in AUMs of cattle use compared to numbers means a trend toward a shorter use season. With sheep the numbers have increased moderately, while AUMs of use have declined, showing a substantial shortening

in the period of range use. However, sheep grazing on Bureau of Land Management lands is mostly in the southeastern part of the State where range forage is largely annual vegetation. In such areas, sheep numbers will vary widely, depending on climatic conditions.

Overgrazing on public lands over a long period of years has resulted in a gradual replacement of desirable plant species by those of lower quality. Plant succession has been reversed, yielding a range of lower productivity and greatly reduced carrying capacity. Much of the sagebrush-bunchgrass zone in the eastern part of the State has retrogressed to pure stands of sagebrush with carrying capacity reduced to less than a fifth of its potential. In the southeastern desert region, spine bearing shrubs and other low value shrubs and forbs have replaced the more desirable shrubs and grasses, with corresponding reduction in carrying capacity.

2. Recent Trends and Forecast to 1980 27/

a. Beef Cattle - Total production of beef cattle increased steadily from 1948 to 1957, decreased slightly in 1957 and 1958 and has increased continuously from 1959 through 1965. As indicated in Table 41, no dramatic increase in beef cattle production has been projected for the period 1966-1975. It is clear that increased production of range cattle will be directly dependent upon improved range management practices.

TABLE 41

BEEF CATTLE PRODUCTION AND FEED REQUIREMENTS

1954 - 1975

Year	Total No. of Head	Total Feed Requirements: Feed Grains (Tons)	Hay (Tons)	Grazing & Pasture AUMs
1954-57 Ave.	3,157,920	862,682	2,861,480	17,842,352
1965	3,288,000			
1975 (Projection)	3,211,000	896,793	2,803,500	17,701,300

b. Sheep - Production in California declined from World War II, until 1948, then increased steadily until 1956. From 1956 to 1961, total sheep grazed, fluctuated between 2,020,000 and 2,052,000 head with a steady decline to 1,758,000 head in 1965. No significant increase in production is projected through 1975. Table 42 summarizes the relevant production and feed requirements from 1954 - 57 through 1975.

TABLE 42

SHEEP PRODUCTION AND FEED REQUIREMENTS

1954 - 1975

Year	*No. Head	Total Feed Requirements Feed Grains (Tons)	Hay (Tons)	Grazing & Pasture (AUMs)
1954-57	2,991,250	75,173	239,300	5,494,850
1964	2,612,000	--	--	--
1975 (projection)	2,602,000	64,415	208,160	4,813,200

*Includes total number of ewes 1-year and over, number of early lambs raised, number of ewe lamb replacements (20 percent of ewes 1-year plus) and other sheep (estimated at 200,000).

c. Forage Production on BLM Lands, 1966-1980 - Fifty to sixty percent of BLM's rangelands now used for grazing are arid desert with little potential for improvement by present rehabilitation methods. It is estimated that a 10 percent forage increase can be made available through water development which will accommodate a small portion of the expected demand for use. Additional benefits will come from improved management of the lands, but this will be slow - 30 years or more. An estimated 25 to 30 percent improvement in range capacity is possible but management changes will not be in full swing for another five or six years. Until 1972 or thereabouts, BLM will be in the process of adjusting livestock numbers on the downward side. Also demands for wildlife, recreation, urban expansion will reduce the area and forage available for livestock use. It is therefore concluded that livestock numbers will decline by 10 to 20 percent in this area between 1966 and 1980.

From 25 to 30 percent of BLM lands are in the sagebrush grass zone with a moderate potential for improvement. Adjustments in carrying capacity are in the process of being made. Over the next three to five years forage production will remain constant as livestock numbers are adjusted downward (estimated 20 percent). Beginning in 1970 or 71, the combined results of management, range rehabilitation and improvement will produce a continuing rise in forage production followed by corresponding increases in stocking. By 1980, the increase is estimated to be 50 percent

over the 1970-71 production rate or 30 percent over the present. It is not anticipated that competing uses (wildlife, recreation, etc.) will materially alter this estimate.

The remaining 15 percent of BLM lands are largely annual grassland and chaparral. These lands have high potential both by increasing production of the annual grasslands through management and rehabilitation and by conversion of chaparral to grassland. Also, these lands have considerable demand for big game and other forms of wildlife, for recreation, for watershed and other uses. Much of this land is in fractured or mixed ownership. It is anticipated that the increases in forage production up to 1980 for livestock will be about equal to or offset by land disposal programs and by needs for big game, recreation and watershed protection.

C. Wildlife

1. Present Situation - Hunting and fishing are important segments of the California economy. According to statistics published by the California Department of Fish & Game, nearly $500 million are spent annually on hunting and fishing. This is broken down as follows:

Hunting	$168,063,332
Freshwater fishing	226,884,935
Saltwater fishing	92,227,033
Total	$487,175,300

These figures represent about 14 percent of total spent for recreation in the State in recent years.

According to the State Fish and Wildlife Plan, hunting license sales have increased from 291 thousand in 1940 to approximately 700 thousand in 1964. Fishing licenses for this same period increased from 900 thousand to 1,766 thousand. These figures are further evidence of the contributions made by hunting and fishing to the State's economy.

Table 43 summarizes the wildlife inventory and 1964 harvest. Recent estimates indicate that nearly 200,000 big game spend at least part of each year on BLM lands (See Table 44). BLM lands produce a large share of the State total of antelope, bighorn sheep, sage grouse, chukars, and Gameel's quail. They are also important for deer, tule elk, California and mountain quail, dove, rabbits and band-tailed pigeons. Furbearers and non-game wildlife species are also important.

In the case of inland fish resources, California has 29,664 miles of streams that support fish, or that have a potential for fish populations. These streams comprise about 148,000 acres at midsummer flows. There are 17,958 miles of coldwater streams,

TABLE 43

Wildlife Inventory and Harvest

Species	Number	Habitat Acreage	Yield (Harvest) 1964
Big Game			
Mule deer	1,000,000	54,000,000	60,450
Rosevelt elk	2,000	--	87
Tule elk	400	--	50
Rocky Mt. elk	700	--	0
Exotic deer	630	--	10-15
Bighorn	2,500	--	0
Antelope	2,618	--	183
Black bear	15,000	--	685
European boar	3,000	--	0
Feral pigs	10,000	--	4,700
Exotic sheep and goats	12,000	--	(light)
Upland Game			
Blue grouse	--	54,618,500	3,700
Ruffed grouse	--	2,892,000	400
Sage grouse	--	8,061,000	9,900
Chukar	--	9,905,200	60,100
Gray partridge (hun)	--	1,554,500	0
Calif. quail	--	70,674,200	1,993,800
Gambel quail	--	20,605,100	531,680
Mountain quail	--	45,658,100	132,920
Pheasant	--	14,749,400	817,900
Wild Turkey	--	903,800	0
Band-tailed pigeon	1,000,000	27,510,500	248,500
Mourning dove	20,000,000	81,664,000	4,766,300
White winged dove	--	7,627,800	20,000
Black-tailed jackrabbit	--	91,135,400	1,870,200
White-tailed jackrabbit	--	12,508,100	(light)
Snowshoe rabbit	--	11,351,300	(light)
Cottontails	--	74,000,000	701,300
Brush rabbits	--	39,584,800	77,920
Pigmy rabbits	--	4,048,900	(light)
Gray squirrel	--	33,620,000	75,900

Table 43 - Wildlife Inventory and Harvest - page 2

Species	Number	Habitat Acreage	Yield (Harvest) 1964
Waterfowl			
Ducks	10,000,000 1/	473,400 2/	2,342,700
Geese	1,000,000	"	369,300

1/ 10 year average
2/ Good waterfowl habitat

TABLE 44

Big Game Numbers - California, 1964 (a)

BLM Administered Lands

	* Section 3		** Section 15		Total	
	No.	AUMs	No.	AUMs	No.	AUMs
Elk	350	500	370	430	720	930
Deer	127,800	70,000	117,700	113,900	245,500	183,900
Antelope	1,820	2,350	130	200	1,950	2,550
Mt. Sheep	450	1,350	1,830	4,600	2,280	5,950
Other (b)	40	0	650	50	690	50
Total	130,040	74,200	120,680	119,180	40 251,150	193,380

(a) Based on BLM statistical reports of July 1965

(b) Bear, Mountain lion, Barbary sheep

* Refers to Section 3 of the Taylor Grazing Act and the permit or license grazing use by livestock on public lands.

** Refers to Section 15 of the Taylor Grazing Act and the use of public lands by livestock under lease.

3,337 miles of warmwater streams, and 606 miles of tidal channels. The remaining 7,763 miles are in coastal streams with populations of anadromous salmon and steelhead. There are an additional 7,279 miles of canals consisting of 18,660 acres. This makes 36,943 miles of potentially usable running water, totalling over 166,600 acres.

There are 3,550 lakes and 622 reservoirs which cover 931,877 acres at midsummer. Trout are dominant in 3,511 of these, warmwater species in 304, a combination of trout and warmwater species occur in 70, saltwater species in 1, while 286 do not support game fish. There are about 679,400 acres of lakes and reservoirs capable of supporting fish.

Striped bass are present in 1,445 miles of streams, canals, and tidal channels, in several reservoirs, and in bay and ocean waters. Am rican shad and white sturgeon are both found in over 1,000 miles of inland streams, as well as bays and the ocean. Green sturgeon are present in about 280 miles of inland streams, bays, and ocean.

Rough fish are considered serious problems in over 9,500 miles of streams and canals, and in 95 lakes and reservoirs. These waters consist of almost 210,000 acres.

There is a potential for harvestable production of about 2,348,000 pounds of game fish in streams and canals, 940,000 pounds of resident game fish in tidal channels, and 9,484,000 pounds in lakes and reservoirs, exclusive of the Salton Sea. Of the 12,772,000 pounds, 2,655,900 pounds, or 21 percent, is trout potential.

Statewide, access to waters is generally good. The least accessible category is warmwater streams, with 21 percent of the area closed. Access ranges from this up to 100 percent open at several types of waters.

Estimated angler use in 1963 was 6,805,000 angler days for trout, 4,389,100 anglers days for warmwater fish, 1,750,000 angler days for striped bass, 325,000 days for Salton Sea species, 100,000 angler days for American shad, and 1,500 angler days for sturgeon. Thus, there were an estimated 13,370,600 angler days spent for fish in inland waters in 1963.

Table 45 gives a summary of the pertinent information collected for Inland Fish Inventory.

2. Forecasts to 1980 - Forecasts to 1980 of wildlife habitat changes and the resultant effects on the State's fish and wildlife is best summarized in a statement taken from the California Fish and Wildlife Plan. Table 46 shows the wildlife habitat changes expected Statewide.

TABLE 45 28/

SUMMARY OF INLAND FISH INVENTORY

Habitat Type	Miles or Number	Area (Acres)	Harvestable Production Pounds of Game Fish Annually	Percent Open To Anglers		Present Angler Use
				Miles or Number	Acres	
Coldwater Streams	17,968	25,765	592,600	88	91	1,281,700
Coldwater Canals	273	360	6,200	89	84	
Warmwater Streams	3,337	28,150	1,054,400	61	79	1,375,800
Warmwater Canals	7,005	18,300	694,800			
Tidal Channels	606	78,650	940,000	100	100	500,000
Subtotal	29,179	151,225	3,288,000			3,157,500
Coldwater Lakes	3,316	151,028	669,000	99	99	1,446,300
Coldwater Reservoirs	195	72,988	871,300	90	98	
Combination Lakes	2	610	40,400	100	100	1,064,900
Combination Reservoirs	68	108,604	2,026,100	78	96	
Warmwater Lakes	85	49,663	2,130,500	82	97	1,905,800
Warmwater Reservoirs **	219	76,313	3,746,700	41	83	
Salton Sea	1	220,000		100	100	325,000
Unproductive Lakes	146	214,073	0			0
Intermittent Reservoirs	140	38,398	0			0
Subtotal	4,172	931,877	9,484,000*			4,742,000
Striped Bass	1,445			90	99	1,750,000
American Shad	1,120			60	--	100,000
White Sturgeon	1,008			100	100	1,500
Green Sturgeon	280			100	100	
Catchable Trout Streams	1,279			100	100	3,619,600
Catchable Trout Lakes	169	29,660		100	100	
Rough Fish Problem Streams	8,697	32,180				
Rough Fish Problem Lakes	95	173,334				
Grand Total			12,772,000			13,370,600

* Exclusive of Salton Sea.

** Exclusive of Farm Ponds under 25 Acres.

Source: California Fish and Wildlife Plan, Vol. III A, P. 263

TABLE 46

WILDLIFE HABITAT CHANGES - STATEWIDE

Twenty-one habitat types show a projected decrease in acreage by 1980, six show an increase, and two will remain the same. Examples of losses anticipated for the better wildlife habitat types are given below.

Type	Acreage Loss	Percent Change
Woodland-grass	329,682	5.4
Woodland-chaparral	91,599	3.3
Coast sagebrush	103,457	6.0
Hardwood	61,264	5.0
Saltbush-buckwheat	100,358	14.0
Riparian	52,663	13.3
Seasonal marsh	23,514	10.9
Marsh	23,514	10.9
Valley mesquite	47,160	100.0
Tidelands	1,900	6.3
Pine fir-chaparral	98,891	0.8

Following are examples of the habitat types that will gain acreage by 1980.

Type	Acreage Gain	Percent Change
Agriculture	677,824	6.4
Urban-industrial	1,409,023	51.3
Barren	102,683	6.0
Lakes, bays, reservoirs	232,990	16.0

The effects of the habitat changes on wildlife species are summarized as follows:

a. Big Game - Mule deer numbers are expected to drop slightly because of overgrazing by livestock in some areas which inundate key deer winter ranges, and conversion of brush and tree habitats to open grass for livestock. Tule elk should remain static, and Roosevelt and Rocky Mountain elk could increase slightly in numbers. Bighorn will do well to maintain present numbers, exotic big game probably will increase slightly, and the pronghorn antelope chould remain statis. Black bear and feral pig numbers will dip slightly.

b. Upland Game Birds - Populations of blue grouse, mountain quail, and bandtailed pigeons should remain static. A slightly upward trend is anticipated for chukars, red-legged partridge, ring-necked pheasant, wild turkey, mourning dove, and exotic doves. Downward trends are expected for sage grouse, ruffed grouse, California quail, gambel quail, and whitewinged dove. At best, the gray partridge will be able to maintain present remnant populations.

c. Upland Game Mammals - An upward trend is predicted for exotic squirrels, white-tailed jackrabbits, and snowshoe rabbits. Chickaree populations should remain about the same. Slightly downward trends are predicted for blacktailed jackrabbits, cottontails, brush rabbits and gray squirrels.

d. Waterfowl - Populations of geese, whistling swans, and sandhill cranes are expected to remain about the same. A slightly downward trend is predicted for dabbling ducks (pintail, widgeon, mallard, teal) and diving ducks (canvasback, scaup). Losses will be due mainly to agricultural and reclamation projects in the Canadian and Alaskan breeding grounds which will reduce habitat.

e. Furbearers - Population increases are predicted for opossum, pine marten, fisher, river otter, and feral house cat. Coyotes could increase. Static populations are predicted for weasels, possibly wolverine, skunks, red fox, mountain lion, and bobcat. Downward trends are predicted for raccoon, ring-tailed cat, badger, gray fox, kit fox, beaver, and muskrat.

f. Nongame Wildlife - The whole gamut of species (moles, shrews, bats, rodents) is not expected to change significantly in numbers unless man conducts more extensive control programs for some species.

g. Birds - Divers such as grebes and loons may increase slightly, but downward trends are predicted for rails, large wading birds, shorebirds, hawks, owls, vultures, the golden eagle, and the bald eagle. The condor is severely depleted to an

estimated population of 40. It is questionable whether reproduction in this species can keep pace with natural and accidental losses even in the face of strict protection.

h. Songbirds - As a general rule, conditions should remain relatively static for these species.

i. Inland Fish - New reservoirs to be constructed by 1980 will have a potential of adding 2.5 million angler days for trout fishing and 5.5 million angler days for warmwater fishing. Twenty-five new coldwater (trout) reservoirs will contain 17,000 acres of water; 30 new warmwater reservoirs will add 68,000 acres; and 25 new combination (trout and warmwater) reservoirs will add 115,000 acres. Approximately 800 new miles of canals covering 7,000 acres will be capable of producing 70,000 pounds of fish and supporting 70,000 angler days, but the percentage that will open to the public in unknown. Some 7,700 acres of present lakes and reservoirs and about 500 miles of coldwater and warmwater streams will be inundated by reservoirs. From 1,000 to 3,000 miles of streams may face problems from pollution, logging, gravel removal, channelization, and construction activities, and this will reduce the quality of much inland fish habitat by 1980.

j. Salmon and Steelhead - Water development is the major activity that will significantly alter the amount of salmon and steelhead habitat by 1980. This is discussed earlier in this summ

k. Marine Resources - Man's activities will not make major physical changes in ocean habitat, except by bay and estuary filling, highway viaducts, and offshore oil drilling. Marine habitat along the coast will be influenced by the increased amounts and types of sewage that will enter the ocean. In the offshore oceanic areas, two investigations should be made: the relationship between air pollution and the marine environment and the impact of desalinization of sea water on fish and wildlife. Man's research efforts and understanding of the ocean will increase. This can yield rich dividends in the form of minerals and protein foods, and can return material benefits in a relatively short time.

The number of annual hunter days in California are expected to increase from 6 million each to over 7.5 million hunter days in 1980. BLM lands are expected to provide approximately 1.1 million hunter days of the estimated total. Angler days are projected to increase from over 20 million in recent years to 34 million angler days in 1980. 28/ Angler days of fishing provided in 1980 by BLM lands are estimated at 702 thousand.

The increased hunting and fishing on BLM administered lands by 1980 and the decades to come are reflections of California's ever growing population. However, closures of private lands to hunting and fishing, improved access to BLM lands, and increased national emphasis upon recreation will also be major factors contributing to hunting and fishing pressures.

D. Minerals

1. Present Situation - Total value of mineral commodities produced from public lands in California continues to increase. Industrial expansion, increased population, and increased per capita consumption will inevitably result in further demands on BLM administered minerals.

Increases were reflected in the following commodities: petroleum, natural gas, potash, sodium, gypsum, sand and gravel, etc., and decorative stone. Decreases were reflected in gasoline (slight) competitive mineral leases, and oil and gas leases.

Despite its abundance of mineral resources, California is not self-sufficient in minerals, particularly mineral fuels. Petroleum products, however, constitute the largest single dollar contribution to mineral production from the public lands of California. Recently developed steam-injection techniques for secondary recovery projects can be expected to accelerate and prolong production well beyond original estimates.

Exact definition of State and Federal boundaries on offshore lands has stimulated bidding and development, and will no doubt be the scene of most new projects.

Highway construction will continue to demand increasingly larger amounts of material under free use permits. Value of 1966 permits, $2,357,812, was 3½ times greater than 1965 which was in turn over twice the 1964 figure.

Some of the recent developments in California minerals industry are summarized as follow: Pacific Cement and Aggregates installed a new kiln at Victorville; Ideal Cemetn is putting in a new plant at Redwood City; Pacific Western Industries is putting in a new plant at Tejon Ranch; Kaiser Aluminum and Chemical Corporation expanded facilities at Moss Landing; Merch and Company, Inc., in South San Francisco, modernized their plant. The Long Beach gypsum products plant of National Gypsum Company and the Fremont Wall Board Plant of the Flintkote Company are on full steam. Leslie Salt recently increased the capacity of its Neward plant and improved its Amboy plant. Stauffer Chemical enlarged their soda ash, sodium sulfate and borax plants. U. S. Borax and Chemical Corporation expanded their facilities at Boron. Port Costa Clay Products Company, Division of Homestake Mining Company has a new light weight aggregate plant in Contra Costa County; Pittsburg Glass has a new plant in Fresno; John-Manville has a new floor tile plant at Hayward; Kaiser has a new pelletizing plant at Eagle Mountain; Molay Corporation has a new europium oxide extraction

plant at Mountain Pass. National Lead put in new warehousing facilities at Oakland to improve service to its titanium pigment customers in Northern California. Union Carbide improved their Pine Creek Tungsten mill; this permits recovery of high-purity by-product molydenum and copper metals. Morris P. Kirk and Sons, Inc., a wholly owned subsidiary of National Lead has a new metals smelting and refining plant in Richmond.

The examples cited are an indication of the State's continued industrial growth. Industrial, expansion and development can't help but create increased demands on BLM's mineral resources.

Tables 47, 48, 49, 50 summarize BLM mineral activity. In those instances where a common definition and unit of measure could be found, BLM and State production figures are compared to show the direct relationship between the two.

From 1962 through 1966, BLM mineral production resulted in $150 thousand from the disposition of mineral materials including gypsum, building stone, clay, basalt, sand, gravel and rock, cinders and fill dirt.

2. Projection to 1980 - State mineral production as projected to 1980 by BLM Mining Engineers, is a straight line function. This is conservative; however, lacking more information, it establishes a minimum. (See figure 18). For the past five years BLM lands have contributed approximately 5 percent of the State's total production. There is no reason to expect this to decrease. As the industry expands and readily available mineral materials are depleted, demand for mineral products from BLM lands will increase proportionately.

E. Water

1. Present Situation - Statewide - Like the State itself, California's water supply is characterized by contrasts. Annual water runoff from precipitation varies from more than 80 inches in the North to nearly zero in the arid Southeast. The average annual Statewide runoff is about 71 million acre-feet. The runoff has, however, ranged between 18 million and 135 million acre-feet.

According to the State Water Plan of 1957, California's primary problem is not one of deficiency, but rather maldistribution throughout the State. Approximately 72 percent of the State's water resources are located in the northern one-third of the State, while 75 percent of the demand is in the remaining two-thirds, the bulk of which is in the lower one-third. (See figure 19) The other half of California's water problem is that the bulk of the State's waters are not naturally available when they are needed. The problem of maldistribution and supply at the proper time sound simple, but the solution is actually very complex.

TABLE 47

MINERAL ACTIVITY

Gasoline and L.P. in 1000 Gallons

		California	BLM	BLM %
1962	Gasoline	716,904		
	L.P.	407,378		
		1,124,282	65,190	5.8
1963	Gasoline	715,303		
	L.P.	393,503		
		1,108,806	61,041	5.5
1964	Gasoline	720,373		
	L.P.	352,614		
		1,072,987	37,950	3.5
1965	Gasoline	655,780		
	L.P.	339,082		
		994,862	37,726	3.8
1966	Gasoline	634,638		
	L.P.	353,164		
		987,802	32,787	3.3

Natural Gas in Million Cu. Ft.

	California	BLM	BLM %
1962	564,220	14,733	2.6
1963	646,486	12,104	1.9
1964	660,444	21,206	3.2
1965	660,384	26,176	3.96
1966	715,113	26,653	3.7

Gypsum in Short Tons

	California	BLM	BLM %
1962	1,746,960	21,053	1.2
1963	1,756,270	40,289	2.3
1964	1,893,000	34,647	1.8
1965	1,611,000	24,423	1.5
1966	1,207,000	43,813	3.6

TABLE 48

Ratio of Potassium Ore Produced from BLM Lands to Tons of Potash Produced in California

(Short Tons)

	California (Short tons of Potash	(Short tons of Potassium ore)	Ratio - BLM Ore / State Potash
1962	176,000	303,542	172
1963	167,000	299,057	179
1964	186,000	290,599	156
1965	183,000	313,585	171
1966	182,000	320,874	182

TABLE 49

Ratio of Sodium Ores Produced from BLM Lands To Tons of Sodium Produced in California

(Short Tons)

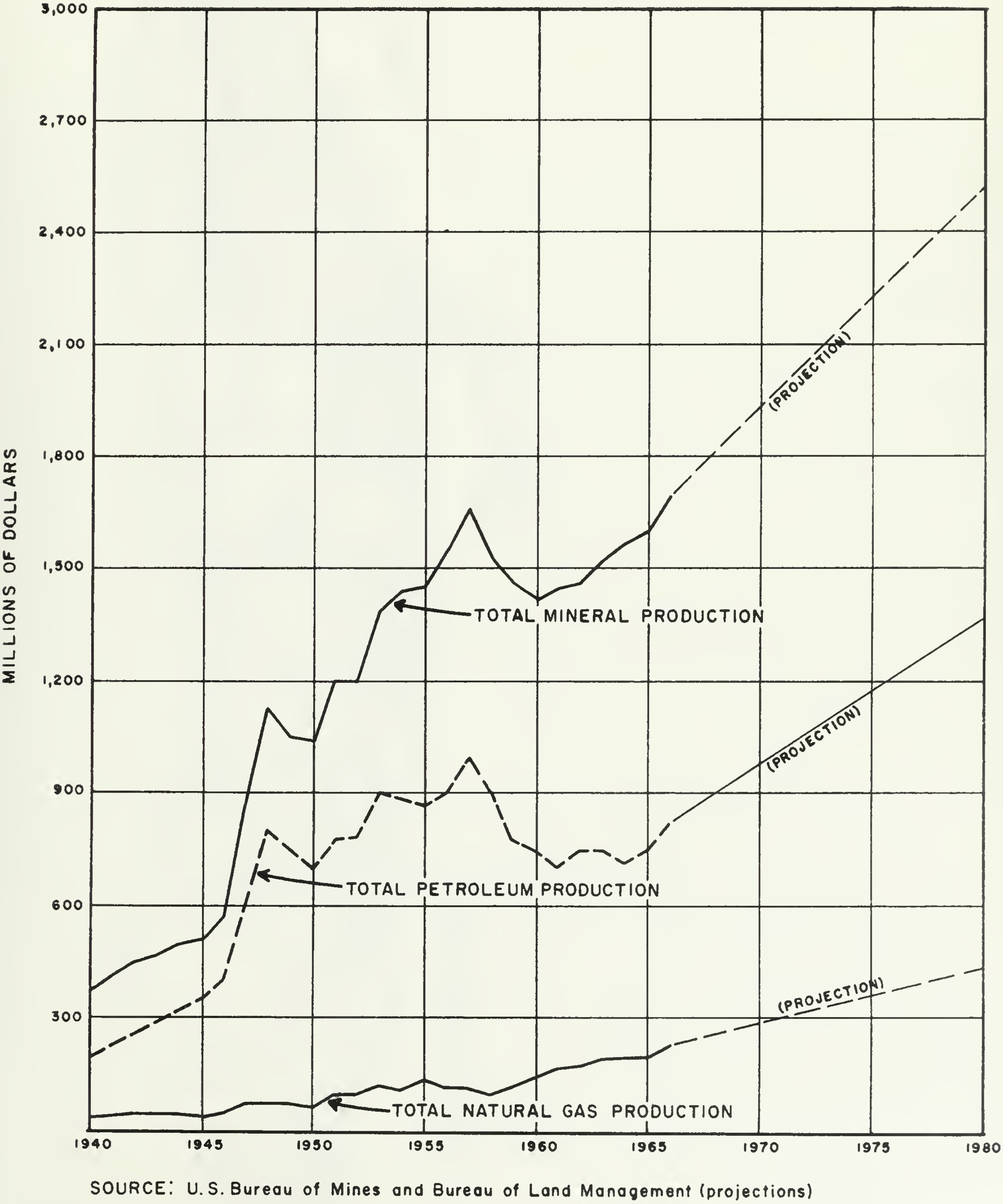
1962	1963	1964	1965	1966
California				
333,000 Na_2SO_3	312,334	343,416	366,039	364,024
324,444 Na_2SO_4	316,221	436,267	451,945	463,687
657,444	628,555	779,683	817,984	827,711
BLM				
861,758	?	885,168	903,325	959,410
Ratio BLM (Ore) / State Sodium				
131		114	110	115

TABLE 50

Crude Petroleum in 42-Gallon Barrels

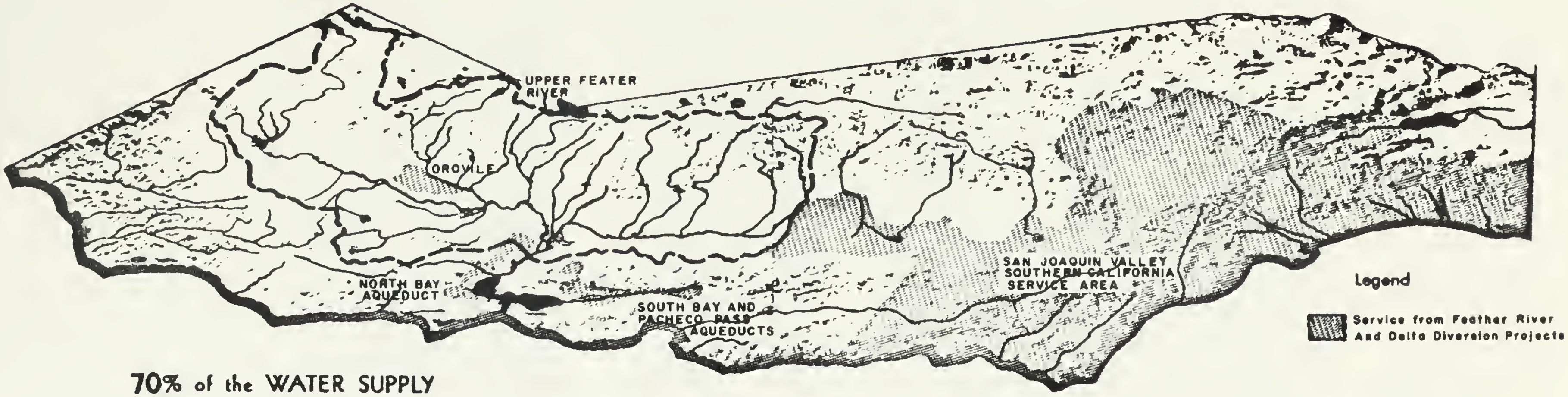
	California	BLM	% Produced from BLM Lands
1962	296,540	17,829	6
1963	300,733	16,765	5.6
1964	300,009	17,601	5.9
1965	316,428	17,524	5.6
1966	345,295	17,931	5.2

MINERAL PRODUCTION



SOURCE: U.S. Bureau of Mines and Bureau of Land Management (projections)

FIGURE 18


UPPER FEATER RIVER
OROVILLE
NORTH BAY AQUEDUCT
SOUTH BAY AND PACHECO PASS AQUEDUCTS
SAN JOAQUIN VALLEY SOUTHERN CALIFORNIA SERVICE AREA
Legend
▨ Service from Feather River And Delta Diversion Projects

70% of the WATER SUPPLY
originates in the northern third of the State

77% of the WATER NEED
lies in the southern two-thirds
of the State.

FIGURE 19

The unequal geographic distribution of surface water resources has resulted in a serious overdraft of underground water basins. In many areas, underground water is used at a rate far in excess of replenishment. The overdraft from underground basins has produced serious lowering of water tables, intrusion of sea water into coastal basins, subsidence of ground surfaces, and high pumping costs.

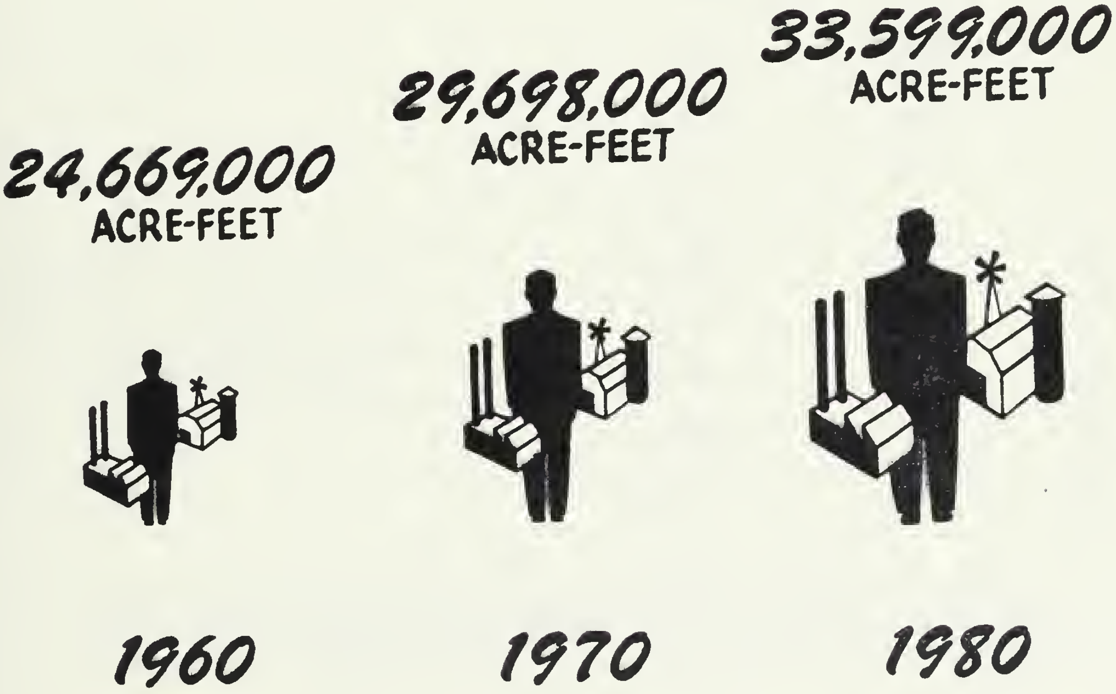
The California State Water Project has been developed to meet this need. The system of dams, aqueducts, pumping stations, reservoirs, and other facilities will deliver water to the Southern California area and intermediate points by 1972. Total costs of the project will exceed $20 billion. The system is designed to distribute 4,000,000 acre-feet of water annually. The project will bring flood control to many areas of northern California and make possible continued economic development and urbanization in central and southern California. 30/

The gross consumptive use of water in 1960 totalled more than 24,500,000 acre-feet. This figure includes demands from agriculture, industry, and domestic uses. Table 51 lists the estimated annual water requirements by hydrographic areas. The bulk of BLM administered lands are in the following hydrographic areas: North Lahontan and South Lahontan, Colorado Desert, and North Coastal.

2. Water Yields from Public Domain Land - It has been estimated that the public domain lands in California yields approximately 2,100,000 acre-feet of water per year. 31/ The estimated mean seasonal runoff in the State, according to the State Water Plan is 76,216,000 acre-feet. The runoff from public domain land compared to the total runoff for the State indicates that approximately 2.7 percent comes from the public domain lands.

3. Future Water Demands to 1980 - Ultimate water requirements according to the State Water Plan for irrigation, urban, suburban, industrial and miscellaneous total 51,128,000 acre-feet. Present water requirements for these uses total 23 million acre-feet. Water demand in 1980 for these same uses is projected to be 34 million acre-feet. (See Figure 20) Irrigation water requirements total more than 70 percent, which shows the continued importance of California's agriculture. 33/ Increased water requirements are a result of California's increasing population which will reduce the number of irrigated lands by 2 million acres.

California Water Requirements



ONE ACRE-FOOT = 325,851 GALLONS

FIGURE 20

TABLE 51

ESTIMATED ANNUAL REQUIREMENTS FOR WATER BY HYDROGRAPHIC AREA, CALIFORNIA

(In thousand acre-feet)

Hydrographic area	Type of Water Service Irrigation farm-lot	Urban and suburban	Miscel-laneous
Total	22,580	1,654	224
North Coastal	508	21	5
San Francisco Bay	248	388	36
Central Coastal	647	47	15
South Coastal	917	885	2
Central Valley	15,608	277	104
Sacramento River Basin	n.a.	104	70
Tulare Lake Basin	n.a.	109	3
San Joaquin River Basin (including Delta)	n.a.	64	31
Lahontan	709	12	14
Colorado Desert	3,943	24	48

Sources: State Water Resources Board; Bulletin No. 2, Water Utilization and Requirements of California, Table 179, June 1955; records

F. Recreation

1. California's Outdoor Recreation Resources - The natural landscape of California has resulted in a heritage of unique forms of land and water that the people of California and their visitors have come to enjoy and use. It has a wide variety of recreational opportunities and a great many recreational areas and facilities, provided by hundreds of Federal, State and local agencies, as well as numerous private organizations and individuals. Yet despite this variety and quantity, the State's recreation areas and facilities are presently overtaxed.

2. Outdoor Recreation Use and Demand - In a recent study completed by the Stanford Research Institute, Californian's and visitors to the State compiled 877 million participation days of active outdoor recreation in 1960. (Note: Participation day refers to a specific activity participated in during one day - in effect one person could participate in one, two, three, or more activities in one day resulting in one, two, three, or more participation days as the result of one recreation visit. These figures do not include walking for pleasure, driving for pleasure, or sightseeing). 35/ It was estimated by S.R.I. that these figures will more than double by 1980. The above figures indicate the magnitude of recreation in California and give an indication of pressures that are and will be exerted on public domain lands in the State.

3. Public Recreation Suppliers - More than 375 agencies within the State are trying to meet the needs of public recreation. 36/ Of these, there are six major agencies of Federal government which supply large amounts of public recreation: National Park Service, U.S. Forest Service, Bureau of Reclamation, Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Bureau of Land Management. Six major divisions of State government have extensive recreation programs: Division of Beaches and Parks, Division of Recreation, Division of Small Craft Harbors, Wildlife Conservation Board, Department of Water Resources, and the Department of Education. There are over 360 recreation departments located in incorporated cities, county governments, and park and recreation districts.

4. Public Recreation Expenditures - In 1966, public expenditures for planning, acquisition, development, and management of recreation programs were as follows:

a.	City governments	$85 million
b.	State agencies	$45 million
c.	County governments	$24 million
d.	Federal agencies	$19 million
e.	Recreation and Park Districts	$ 7 million

There has been no concentrated effort to this date by any one agency or combination of agencies or groups to determine the expenditures of private funds for the development of non-public recreation programs. No doubt there is a large amount of money being spent and as recreation pressures for private lands grow, so will expenditures.

5. Public Agencies as They Relate to Fullfilling Public Recreation Needs - The State of California has developed a system that shows where recreation needs should be satisfied in the State. Their solution to this problem involves dividing the State into time zones of travel in relation to population centers:

Zone 1 - Normal travel - up to one hour from major population centers. A serious problem exists in this time travel zone in meeting day use recreation needs. This is reflected in the current large expenditures by cities to meet this demand. Cities and counties have the primary responsibility in meeting the demands in this travel zone. The BLM has very small acreage that could be made available for programs in this zone.

Zone 2 - Normal travel - one to two hours from major population centers. The major type of recreation needs are day use facilities with selected overnight accomodations. Recreation needs within this time travel zone will be the greatest in demand of all time travel zones. Counties and State programs are most active in this time zone. Some Federal agencies have active recreation programs. The BLM does not have an active management recreation program at this time in this travel zone, although there is public domain having recreation potential within this area.

Zone 3 - Normal travel - two to four hours from major population centers. Major recreation needs to be served here are pretty evenly split between day and overnight use as there is considerable weekend and regular vacation use of facilities. Primary responsibility of fulfilling needs is currently being met by State and Federal governments. It is evident that counties are taking a more active part in promoting programs to serve a small percentage of the overall needs. The BLM has approximately four million acres that come within this travel zone but to date have developed very few facilities or management programs.

Zone 4 - Normal travel - over four hours from major population centers. Demand for the major use, overnight facilities, is less than the demand for recreation needs in the other time-travel zones. Federal and State governments are presently assuming the major responsibility for meeting these needs with very little help from the counties. The BLM has developed a limited number of facilities to meet this demand, but it has the potential for serving a much greater number of people.

By 1980, forecasts 38/ indicate that of the leisure time spent in outdoor recreation 30 percent will be spent in Zone 1, 35 percent in Zone 2, 25 percent in Zone 3, and 10 percent in Zone 4. Accordingly, public domain lands located in Zone 3 will receive great pressures for use and development. It is possible that 75 percent of the BLM's program by 1980 should be developed in this zone to take care of public demand.

6. Bureau of Land Management's Recreation Role - As a supplier of the Federal agencies managing land for recreation use in California, the BLM manages approximately 33 percent of the total. It is estimated that because of limited access and non-identification of public lands, only 50 percent or approximately 7.5 million acres of public domain land in California are available to the public for recreational use. 39/

Of the 4.5 million recreation visits (not counting sightseeing) to the public domain lands in California in FY 1966, about 5 percent of the visits were oriented to specific facilities or developed sites. 40/ In comparison, the U.S. Forest Service accomodated 40 percent of their recreation visits in 1964. 41/

In relation to existing and potential visits, the types of recreation activities taking place on public domain lands, present visits to these lands, and the potential of these lands is as follows:

Activity	Visits in FY 1966	Potential Annual Visits
Camping	625,000	60,000,000
Picnicking	270,000	10,000,000
Fishing	1,700,000	(a)
Hunting	1,800,000	(a)
Sightseeing	2,700,000	27,000,000
Water sports	280,000	3,000,000
Winter sports (b)	6,000	3,000,000
Other	850,000	10,000,000

Activity	Visits in FY 1966	Potential Annual Visits
TOTAL	8,331,000	123,000,000 (c)

(a) Potential recreation visits relating to hunting and fishing on public domain lands in California have not been estimated at this time.

(b) These figures are based on existing lands and do not include proposed reservoirs where BLM could be the managing agency.

(c) Excludes hunting and fishing.

The BLM's ability to serve recreation demand is directly related to the physical and esthetic quality of the land to serve a particular activity as shown below:

Activity	Demand in Annual Visits in 1980
Camping	2,000,000
Picknicking	1,000,000
Fishing (a)	2,000,000
Hunting (a)	2,200,000
Sightseeing	10,000,000
Water sports (b)	800,000
Winter sports	1,500,000
Other	2,000,000
TOTAL	21,500,000

(a) Potential recreation visits relating to hunting and fishing on public domain lands in California have not been estimated at this time.

(b) Improve existing roads and construct new roads into and through scenic areas.

7. Demands of New Recreation Activities - The BLM is aware of new activities that are on the horizon that could have a substantial impact on public domain lands. These activities should be studied and procedures developed for their management. Some to be considered are:

a. Rockhounding - By 1980, it is estimated that there will be 15 million participation days in this activity. A majority of these days take place on public domain lands, mostly in southern California.

b. Dune Buggies - This activity can become widespread

on public domain lands in southern California.

c. Wilderness Buggies - A new machine being tested by Chico State University that can carry four people over four foot diameter fallen trees and rocks, drive through brush, climb a 50 percent slope easily, and propel itself on water. This unit has a tentative sale value of $1,100.

d. Snow-mobile - This machine is having an impact on public domain lands, but how much is not known.

8. Impact of Managed Recreation Use of BLM Lands - It is quite possible that a good management plan dealing directly with recreation activities and tied to a reasonable recreation development program would result in the reduction of:

a. Forest fires - Facilities would not only concentrate users where we want them but would also provide a staff in areas where we presently do not have someone for protection.

b. Pollution - Debris would be controlled, alleviating a substantial problem relating to land and water pollution.

c. Erosion - Management of vehicles is necessary to control the flagrant surface destruction that is happening in many areas of public domain land in California.

9. Estimated Funds Necessary to Plan, Develop, Maintain, and Manage a BLM Recreation Program in California in Relation to Demand through 1980.

Activity	Planning and Development Funds
Camping	$12,000,000
Picnicking	3,750,000
Sightseeing (a)	5,000,000
Water sports	2,000,000
Winter sports	1,500,000
Other	5,000,000
Sub-total	$29,250,000
Maintenance (Total through 1980)	$14,750,000
Management (Total through 1980)	3,000,000
Sub-total	$17,750,000
Total funds through 1980	$47,000,000

(a) Improve existing roads and construct new roads into and through scenic areas.

REFERENCES

REFERENCES

Reference Sources (footnoted)

1. Mineral and Water Resources of California; Part II, Water Resources, U. S. Geological Survey, 1966.

2. Statistical Records, Sacramento Land Office, U. S. Bureau of Land Management, 1967.

3. Timber Trends in the U.S., Forest Resource Report No. 17, U.S.D.A., Forest Service, and California State Office of Planning Records, Feb. 1965.

4. California Growers Association -- unpublished information obtained from the Growers Association, and California State Chamber of Commerce.

5. World Almanac for 1963, pg 255.

6. California Statistical Abstract for 1965 and 1966, State Department of Finance, Financial Research Section.

7. California State Development Plan Program; Feb 1966, Department of Finance, State Office of Planning.

8. Public Land Statistics, U. S. Bureau of Land Management, 1940-1966.

9. BLM Instruction Memo 65-100, Nov 24, 1965.

10. BLM Instruction Memo 65-500, Nov 24, 1965.

11. Quarterly Report of the Urban Planning Assistance Programs in California, Department of Finance, State Office of Planning, June 30, 1967.

12. Twenty Years Ahead in California's Water Resources, A Report of the California State-Federal Interagency Group, Nov, 1965.

13. California Lands, Ownership, Use and Management; Dana, Samuel T., and Krueger, Myron; The American Forestry Association, 919 17th Street, N.W., Washington 6, D.C., 1958.

14. Statistical Records, Sacramento and Riverside Land Offices, U. S. Bureau of Land Management, 1967.

15. Possible Use of Certain Federal Public Domain Lands for California State Park System Purposes, U. S. Bureau of Land Management,U. S. Bureau of Outdoor Recreation, and California Department of Parks and Recreation.

16. Developing the Inland Empire, Southern California Research Council, 1959.

17. California Population 1964, Department of Finance, Financial and Population Research Section.

18. Educational Statistics, California State Department of Education, 1965.

19. 1960 Census of Population, U. S. Bureau of Census.

20. Statistical Records, Dispersable Personal Income, U. S. Department of Economics, Office of Business Economics.

21. Estimated Number of Wage and Salary Workers in Non-Agricultural Establishments, By Industry, California, January, 1939 to December 1962; State Department of Industrial Relations, Feb 1963.

22. Unpublished information obtained from Office of the State Department of Employment, 1967.

23. California's Economic Diversity, Crocker Citizens National Bank, 1964.

24. U. S. Census of Agriculture, 1959, U. S. Department of Agriculture.

25. The Economic Importance of Timber in the U.S., USDA, Miscellaneous Publication 941, July 1963, U. S. Department of Agriculture, Forest Service.

26. Mineral Information Service, Volume 19, Number 1, Jan 1966, California Division of Mines and Geology in Cooperation with U. S. Bureau of Mines.

27. Projections relating to California's Agriculture in 1975, Bulletin No. 778, California Annual Livestock Report of 1965 published by California Agriculture Experiment Station, Davis, California.

28. California Fish and Wildlife Plan, 1965, Human Use, Vol. 3.

29. The California Water Plan, Bulletin No. 3, California Department of Water Resources, May 1957.

30. California State Water Project, Bulletin No. 132-64, California Department of Water Resources, June 1964.

31. BLM Resources Production and Land Use Estimates, 1966 (Unpublished data by California's BLM Districts.)

32. California State Water Project in 1966, Bulletin No. 132-66 dated Jan 1966, California Department of Water Resources.

33. Implementation of the California Water Plan, Bulletin No. 160-66, March 1966, State Department of Water Resources.

34. Water Utilization and Requirements of California, State Water Resources Board, Bulletin No. 2, Table 179, dated June 1955, California Department of Water Resources.

35. Recreation and Parks Study, Part 1, December 1965, California Division of Parks and Recreation.

36. Governor's Conference on Recreation Policy, State of California, October 1962.

37. Report of the 1967 California Legislature, California Division of Beaches and Parks.

38. The California Public Outdoors Recreation Plan, No. 2, California Outdoors Recreation Plan Committee, 1960.

39. Recreation Planning and Development Estimates, California BLM State Office, 1967. (Unpublished estimates by the Recreation Planner, California BLM State Office staff.)

40. Unpublished Public Land Statistics, 1967, Bureau of Land Management, California State Office.

41. Outdoor Recreation in the Nation's Forests, Information Bulletin No. 301, September 1965, U. S. Forest Service.

Miscellaneous literature reviewed but not referred to by footnote reference.

Land Use Planning

1. California - Yesterday, Today and Tomorrow; a brief description of California . . . its resources, economy and postwar opportunity. California State Chamber of Commerce, San Francisco, 1965.

2. Patterns on the Land; Durrenberger, Robert W.; Geological, Historical and Political maps of California.

3. Public Land Ownership and Use; Senate Permanent Fact Finding Committee on Natural Resources, published by Senate of State of California, 1965.

4. Public Lands and Resource Development, published by Senate of State of California, 1957.

5. California Profit Opportunities; 1964; Economic Development Agency.

6. Natural Resources of California; 1965; U. S. Department of the Interior, Office of the Secretary.

7. Economic Report of the Governor, 1966; E. G. Brown, Governor of California.

8. What Are the Public Lands?; Information Bulletin #1, 1965, U. S. Department of the Interior, Bureau of Land Management.

9. Migration to California; March 1963, Department of Motor Vehicles, California Division of Administration.

10. Migration and the Southern California Economy; Report No. 12, Southern California Research Council, 1967.

Population

11. California Population Projections; 1965-2000; Department of Finance, Revenue and Management Agency.

Forest Products

12. The Possible Impact of Recreation Development on Timber Production in Three California National Forests; Amidon, E. and Gould, E.; Forest Service PSW Technical Paper No. 68-1962.

13. New Products from Low Grade Ponderosa Pine Timber; Barger, R. 1., Forest Service Research Paper RM-10, December 1964.

14. California Lands; Dana, S. and Krueger, M.; American Forest Association Series 1958.

15. Production of California Timber Operators in 1964; Dotta, D. State Forest Notes (California) No. 27, January 1966.

16. Timber Resources for America's Future; Forest Resources Report #14, U. S. Department of Agriculture, Forest Service, January 1958.

17. Forest Statistics for California, University of California, Berkeley, 1954.

18. Markets for Woodland Products; Gilden, E. and Dotta, D. University of California 1957.

19. The Demand and Price Structure for Forest Products in 1963; Hair, D. and Ulrich, A., U.S.D.A. Miscellaneous Publication 953, October 1963.

20. Timber Harvest in California 1962; Muerle, G. and Hornibrook, E., Forest Service Research Bulletin - PSW-2; 1965.

21. Economics of the Utilization of Commercial Timber and on Livestock Ranches in Northwestern California; Poli, A. and Roberts, E., Forest Service, California Forest and Range Experiment Station, Miscellaneous Paper No. 25, April 1958.

22. Economic Development Prospects for the Commercial Forest Resources and Forest Products Industries of California; Zivnuska, J.; Cox, P.; Poli, A.; and Pesonen, D.; Report to the California Office of Planning, October 1963.

Minerals

23. Resources in America's Future; Landsberg, Fischman, Fisher, Johns Hopkins Press, 1962.

Recreation

24. California Recreation and Parks Study; 1965.

25. Parks are Forever; State of California, Division of Beaches and Parks.

26. Recreation Resources; Economic Aspects, Supplement.

27. The California Boating Plan, 1964; State of California, Division of Small Craft Harbors.

28. Lower Colorado River Land Use Plan; U. S. Department of the Interior.

29. Community Action for Balanced Development.

30. Parks For America; A survey of park and related resources National Park Service, 1965.

Wildlife

31. Economic Survey - Hunting 1955; (mimeo memorandum), California Department of Fish and Game, 1957.

32. Economic Survey - Fresh and Saltwater Fishing 1955; (mimeo memorandum), California Department of Fish and Game, 1957.

Water

33. The Pacific Northwest Forces a New Water Challenge; William E. Warne, Director, Department of Water Resources, The Resources Agency, State of California.

34. Water For The Millions; a series of six articles, Dec. 1964, by William E. Warne, Department of Water Resources, The Resources Agency, State of California.

35. How California Plans Water Development; report of the Coordinated Planning Subcommittee, Dec. 1965.

36. California Commands Her Water Destiny; January 1966; William E. Warne, Director, Department of Water Resources, The Resources Agency, State of California.

37. California's West Side Program (Freeway-Aqueduct), State Resources Agency, Dec 1962.

38. Summary of Current Planning Program; California State-Federal Interagency Group, Feb 1966. (A summary of current water planning by the California Department of Water Resources, Bureau of Reclamation, Corps of Army Engineers and Soil Conservation Service.)

Bureau of Land Management
Library
Bldg. 50, Denver Federal Center
Denver, CO 80225